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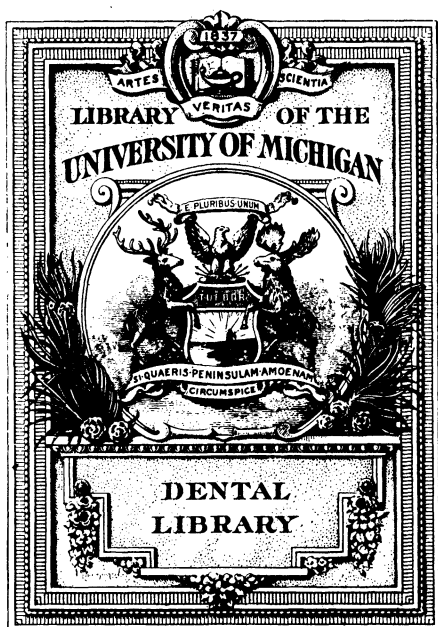
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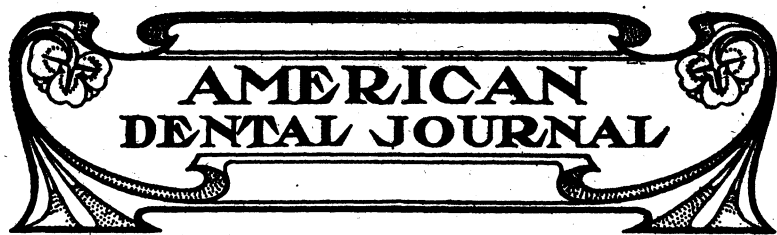
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Listerine Tooth Powder

Tooth powders have long been empirically employed, chiefly as a mechanical agent for cleansing the teeth, and with little regard to their composition or chemical action. Many of the articles sold for this purpose contain ingredients prone to fermentative action in the mouth, such as orris root, starch, sugar, etc., and, in addition, pumice stone, cuttlefish bone, or other harmfully abrasive substances.

Listerine Tooth Powder, possessing neither of these objectionable qualities, very acceptably meets all the requirements of a frictionary dentifrice, and promises to give much satisfaction to those who employ it, in conjunction with a mouth-wash of Listerine, suitably diluted.

To dental practitioners of record, the manufacturers will be pleased to send a supply of samples of Listerine Tooth Powder for distribution to patients.

Lambert Pharmacal Co.
Saint Louis

OUR POST GRADUATE COURSE

PORCELAIN.

T. ELHANAN POWELL, D.D.S.

After determining the shades to be used, we shall have to make a choice in methods for combining these shades.

When we first began to use the porcelain it was customary to choose that shade point which most nearly harmonized in color with the tooth to be restored and the entire inlay was made with this shade. Experience soon exposed the inequality in color of the different parts of the tooth, the point being blue, say—the metal, gray, and the gingival, brown or yellow, as the case might be. Of course, an inlay composed of all blue or all gray or all brown or yellow, while matching some particular part of the tooth would be “off color” at other parts.

Some one, Dr. Reeves, I think, conceived the idea of building the porcelain in layers. This idea was to first ascertain the basic or dentine color, building the first layer of this, and gradually adding other shades until the contour is finished.

For instance, the base of yellow, the middle green and blue, with the tip still lighter mixture.

Dr. Reeves lays these colors on, one shade at a time, drawing his brush mesio-distally and then lays on the next color with the movement of the brush in the opposite direction.

This, he claims, arranges the porcelain molecules in such a way that they correspond with the natural arrangement of the cells within the tooth, thereby giving a more natural appearance to the finished inlay.

There is Dr. Taggart's method, too, which is to make the base of a white body, gradually adding the enamel colors to this; but the method which many prefer at the present time is to build with the Brewster matrix lining for a foundation.

This matrix lining should cover the floor and walls up to the margins. Then mix the enamel body, using all the shades that are intended to be used for the inlay; use an excess of yellow or brown for the gingival part, a small portion of yellow or brown for the middle part and gradually blend into the lighter shade for the incisal fourth.

In mixing these shades, great care should be used to exclude all foreign substances; the pad on which the porcelain is mixed should be clean, and the instruments used in mixing should not only *be washed* but *dried* with a clean white cloth.

Either distilled water or alcohol may be used to mix the porcelain. It should be mixed to such a consistency that it can be readily handled with a small-pointed spatula and small particles should be taken on the end of the spatula and placed in the matrix, great care being used to keep the porcelain from overflowing the margins.

The matrix should be filled even with the margins, leaving a sharp outline so that these margins may be distinguishable at all times, thus leaving the inlay when baked, free from sharp overhanging portions.

In packing the matrix with porcelain, the excess of moisture may be removed either by use of clean white blotting paper or by inverting the inlay into the dry powder used for mixing and then afterwards using a brush to remove the excess of powder.

The moisture will be more readily brought to the top by jarring the pliers, with which the matrix is held, with a rasping instrument.

When the inlay is ready for baking, the matrix should be placed on a baking slab and placed in the furnace before the heat is turned on in the same.

If you use an electric furnace, be sure that you never attempt to remove the inlay or change its position, or put any metal instrument, whatever, inside the muffle while the current is turned on. Permitting metal to come in contact with the muffle will "short circuit" the platinum wires and the muffle will "blow out"—causing an expense of several dollars for mending, and you will be compelled to buy a new muffle after two or three such accidents.

The furnace should be cold or just warm when the porcelain is placed inside the muffle, for if the porcelain be placed in a hot furnace two things are liable to happen:

First, the moisture in the inlay may be suddenly converted into steam, which will cause the porcelain to "jump" out of the matrix; secondly, even if this does not happen, subjecting the porcelain to a sudden blast of intense heat will prevent a proper chemicalization of the porcelain, which results in an unsatisfactory inlay.

Some of the best "porcelain" men advocate baking by progression, that is—they turn the heat on the first button until a red heat has been reached, when they increase one button at a time at intervals of two minutes, until they reach the button on which they desire to finish the baking, leaving it there for a definite length of time; this length of time to be determined by experimenting.

There is great variation between different furnaces of the same make and much more variation between the furnaces of different makes.

These differences considered with the difference in the voltage of the electric current furnished by different power plants make it absolutely necessary for each man to make his own time chart for baking.

Dr. Byram, of Indianapolis, claims that the tendency is to overbake porcelain and advocates a low heat for a long time instead of a high heat for a short time. He claims that a high-fusing porcelain will fuse at a very low heat if held long enough; but I question if this be true, for it has been determined by expert men that a porcelain that has been made to fuse at a definite temperature, say 2,200° Fahr., requires the administration of this heat when it is baked to properly fuse the same.

Mr. Brewster of Brewster & Co., of Chicago, a manufacturer of porcelain teeth and porcelain bodies, advocates the baking of porcelain by the following method:

Place the porcelain in cold furnace, turn on the current, and immediately shove the lever of the thermostat to the button which will fuse the porcelain in a reasonable length of time. By experience it will be known how long it may be necessary to reach the fusing point.

After the porcelain reaches the fusing point, hold it at that point until fusion is complete, when the current may be turned off. This does away with the necessity of holding the heat on the first and the other successive buttons two minutes each and, according

to Mr. Brewster, much time is saved and the porcelain is just as satisfactorily baked.

It would seem that I had gotten ahead of my story, for I desire to say that after the first bake or biscuiting of the porcelain, I would carry the inlay back to the mouth and reburnish to cavity. After reburnishing to the cavity, the enamel bodies may be added, the inlay put back in the furnace and carried to a complete glaze. If the porcelain be carefully packed into the matrix, it is rarely necessary to make more than the two bakes; although some operators make three and even four bakes.

When the final glaze has been accomplished, dip the inlay into water, after which the platinum matrix will peel off very easily.

Now place the inlay in the cavity to see if the fit and color is satisfactory, after which imbed the inlay in wax, having the cavity side exposed, which side may now be etched with hydrofluoric acid.

Leave the acid on the matrix for a minute, then let the cold water run on it to wash it off.

Care should be used not to have the acid touch the fingers, for it is very destructive to the soft tissue.

If the inlay be small, a small instrument, heated and dipped in wax and then touched to the outer surface of the inlay, will facilitate handling.

Now undercut the cavity for retention, dessicate thoroughly with warm air, after which a thin cement may be mixed and the inlay set.

It should now be held in position with a wooden wedge, a piece of tape or tied in position with silk floss. Melt wax and flow over the entire inlay to protect the margins from the saliva until the cement is "set."

It should need no polishing, except possibly at the junction of the inlay with the enamel, where the cement needs to be removed.

(To be continued.)

OPERATIVE DENTISTRY.

BY R. B. TULLER, D. D. S.,CLINICAL PROFESSOR OF OPERATIVE DENTISTRY, CHICAGO COLLEGE OF
DENTAL SURGERY.

TELESCOPIC PORCELAIN CROWNS.

The six anterior teeth or some one or more of them are frequently found in a condition of decay that precludes any rational restoration in the way of filling; or at least makes such procedure decidedly questionable from the standpoint of protection and durability, and esthetics as well—certainly if gold is going to be in evidence as a result—and the operator turns to some way of crowning as the best and wisest thing to do.

Take for instance incisors that are so decayed both mesially and distally that only a sort of spike remains (in its labial aspect) and little to favor the retention of fillings, even of a plastic nature; and yet the pulp may be alive and healthy, and its retention desirable, and the question arises: What had best be done? If the pulp is dead or so exposed and diseased as to make its removal advisable or obligatory, the solution of what is to be done is generally solved in the direction of some sort of a porcelain crown with a dowel-pin attachment; which means, of course, cutting the natural crown off at the gum line.

Then there are certain malformed incisors, not infrequently both laterals, that we call "peg teeth"; and while usually perfectly sound they are a decided disfigurement and call for the skill of the dentist to remedy.

Again there is that class of teeth so deficient in enamel (due to interrupted development) that both for the sake of appearance and preservation, the skill of the dentist is enlisted.

With these conditions to be remedied, the telescopic porcelain crown is suggested and the process of making partakes of the nature of inlay work; but, without indulging in a pun, it is an *outlay* instead of an inlay. With those operators who are confident of their ability to mold and bake an entire crown that will match up perfectly, that procedure may be adopted; but others prefer to select a removable pin crown of proper shade, shape and dimensions, and discarding the pin

proceed to adapt this porcelain to their needs; and to the writer this would seem to be the better course, since, with the variety of such crowns in our supply houses, almost any shade and shape desired may be readily secured and with no uncertainty.

Tooth selection, probably, should be the first thing after determining on this particular and not yet very common method of crowning; though some operators, good reliable men, have been following the course for years—long enough to establish beyond question the practicability and reliability of this method of crowning when conditions favor or point to the telescopic porcelain.

The preparation of the tooth for such a crown is, so to speak, to make a dowel of it—a dowel which shall fit into the hole arranged in the crown. Or, in other words, when the tooth has been cut into the desired shape the crown is made to fit it. To do this shaping of the tooth, cutting disks and points are used, with a constant jet of water on the tooth to prevent friction and heat, if the pulp is to be retained. There may also be use for burs, in cutting where it may be found the disks and stones cannot be consistently used.

At the gum line the tooth is cut all the way around deep enough to leave a shoulder preferably slightly above the gum line so that the joint will be hidden, especially in front. From this shoulder there should be a general slight taper of the remaining (central) portion of the tooth to the incisal edge, and this edge must be cut off to correspond to the depth of the hole to be ground out in the tooth.

Of course all decay must be removed and caverns or cavities filled with cement flush with the taper so that this dowel, if we may so term it, presents a smooth, uniform surface. If there is any slight or near exposure of the pulp, it should have the same attention to protect it as in case of filling. The reduction of the tooth should be as much as consistent with the safety and strength of the same, especially laterally, so that there may be as much strength as possible in the porcelain jacket that is to take the place of what is cut away. Of course all the enamel should be removed, and in many instances this may be enough.

When the tooth is prepared, the next step is to prepare the crown selected. This is done by using sharp cutting stones—small ones, of course—to enlarge the hole in the porcelain. Several points may be used up, but they will cut faster and last longer if kept wet.

In the Davis and White crowns the opening is large enough to begin with to admit small mounted stone points; but soft steel and copper ball-pointed bits for the engine may be made or secured which may be used with water and carborundum powder—not too fine—to do the cutting. An old bur may be used by taking the temper out of the point. Make it as soft as possible so that the grains of grit will imbed themselves in it. Copper wire of size to fit the engine handpiece may be used, cutting to the length required and shape the end as desired by revolving in the engine and using a file to shape with.

(These same copper points may be used with grit in the same way in preparing cavities for inlays and fillings. All operators know the difficulty of getting mounted stones small enough. If aluminum wire of a proper size can be had, that metal is good. Soft iron wire may be used also. An aluminum disc with a cutting powder and water, where one wishes to use a thin strong disc, will be found to cut very rapidly. Of course these soft metals wear, too, pretty fast, but they are easily and cheaply renewed, or replaced.)

When the opening in the porcelain has been enlarged some, it is tried on and this is repeated from time to time until an approximate fit to the tooth, and especially to the shoulder, is made. It should go on freely, and further cutting of the tooth away a little may be found advisable instead of cutting the porcelain. It is possible, by use of rouge rubbed on the tooth at the shoulder to show in the crown opening or on the edge of same, where it touches and needs more grinding to make a pretty close adaptation, with a view to cementing it in place without going further. A better way is as follows: Wrap a strip of 1-2,000 platinum about the prepared tooth and with the fingers approximate a fit, being sure to cover the shoulder and have a little lap as well over the small end. Take this to your bunsen burner and with minute bits of pure gold solder the platinum lap in about three places. Return to the tooth, push up well, and then burnish down to a close fit and especially at the neck or shoulder. Try the crown on over it and again cut out the opening if need be until there is a close adaptation of both crown and platinum at the neck. See that tooth is in proper alignment and of the right length, etc., and make corrections necessary until the crown fits up perfectly at the neck, making a close joint, and is otherwise adjusted correctly to adjoining teeth. When this is all done, mix up a

little low-fusing body of a shade to correspond with the dentine color and drop into the crown, and push the porcelain to place over the platinum. Be sure again that the adaptation in all respects is as desired and then all—including the platinum sheath—should come away together without disturbing the relationship before obtained. Take this to the furnace and bake it, after first absorbing all the moisture and slowly drying out with low heat. If it then is needed at the neck, add more material and bake again.

Now, it will be found that the platinum can be peeled away from the inside of the crown, and any that remains, especially labially, that might affect the translucency, may be ground out. The crown should now fit up accurately; though before the second bake any serious excess of crown beyond the root circumferentially should be taken care of by grinding to the contour of the neck of tooth so that there are no protruding shoulders or sharp corners or unevenness to injure the gums, but a proper blending of crown shape to root shape.

When everything is in correct order, the crown should be cemented to place and of course the whole effect should be that of a natural tooth.

No porcelain is as tough as natural tooth structure; or, while it may be strong enough to withstand as much as the natural tooth in some respects, it has a glass-like brittleness under certain strains and may snap when a reasonable limit is exceeded. Rarely do the crowns break in common-sense wear and tear; but a caution should be given with almost any artificial substitute adjusted in the mouth, and the care of the wearer should be to not subject any such thing to all it might possibly stand, but favor it by rational and consistent use only.

In case of jacketing one of those small peg teeth we are called upon to improve, they are to begin with, too small to do much cutting down; but the enamel should be removed up to the neck as a rule. And these little teeth are so small often that the crown must be something larger than the root at neck, and hence trespass upon the surrounding gum somewhat. If the projection beyond the root is smooth and non-irritating no harm will be done, and of course the object in the crown is to fill the space as would a normal tooth. Some of these peg teeth may be fitted without cutting down at all,

except to roughen the surface a little to hold the cement better, but the crown should crowd well up into the gum, and as before said, it should have smooth polished gum contact. If adjoining teeth have closed in on account of the small peg tooth, they may have to be forced apart to permit of a normal sized crown being adjusted, but usually the peg tooth holds the space sufficiently well.

Every operator comes frequently in contact with a set of teeth that are all beautiful, regular and full formed, except the disfiguring peg laterals. The telescopic porcelain is not so difficult to adjust as it might seem, and the improvement is usually wonderful and should command a good fee.

(To be continued.)

NOBLE METALS RECOMMENDED FOR APPLIANCES.

The president, Dr. H. A. Pullen, made an earnest plea for a more extensive use of the pure metals in making regulation appliances. He pointed out that in gold, with its alloys, and irridio-platinum, the orthodontist may accomplish all his purposes, and he raised a number of questions which he hoped would be more scientifically studied, to the end that true answers may be found within a short time. The almost universal use of German silver is prevalent, in his opinion, partly from habit, and partly because it is more convenient to purchase fixtures ready made, and because until very recently no dealer seemed willing to make appliances other than of German silver. These ready-made bands and arches of course look well when first bought, being handsomely gold plated. But in the mouth this plating frequently disappears very rapidly, and considerable discoloration if not actual foulness, often ensues. Teeth in contact with German silver often show metallic stains which it is quite difficult to remove. Dr. Pullen referred to the oft-repeated claim that German silver acts germicidally in the mouth, but this he thought might prove a fertile field for scientific investigation. At all events the nobler metals being apparently cleaner and at the same time effective, it becomes the paramount duty of the specialist to finally determine by scientific experimentation what metals should best be used in orthodontic work.—*Items of Interest.*

PATHOLOGY.

BY GEORGE W. COOK, B. S., D. D. S., CHICAGO, ILL.

DEAN OF DENTAL DEPARTMENT, UNIVERSITY OF ILLINOIS; PROFESSOR OF BACTERIOLOGY AND PATHOLOGY, UNIVERSITY OF ILLINOIS.

Bacteriology is the study of those low forms of life known as bacteria and can only be studied by the aid of the microscope, thus being designated as micro-organism. It is quite impossible, however, to say that all micro-organisms can be classed as bacteria, inasmuch as the word bacteria usually means the lowest forms of vegetable life, while the class of micro-organism that is studied only with the aid of a microscope and belongs to the animal kingdom, is usually understood as protozoa. Therefore the study of bacteriology must be confined to the low forms of plant life. One of the distinctive differences between these two kingdoms and more especially the low forms is that the animal organism receives its food stuff into the body and there utilizing the nutritious material and extruding that which is non-nutritious, while the low forms of vegetable life obtain their nutrition through the cell wall from the environing nutritive substance in which the material is in solution and must of necessity be in direct contact with cell wall.

It will be understood then that bacterial metabolism is a synthetic process, which will be illustrated by the fact that if bacterial be placed in a watery solution containing tartrates, phosphates and sulphate of ammonia, they are able to multiply, thus showing that they are able to build up their body substance out of the simple molecular chemical compounds found in the inorganic substance. The above fact also illustrates the vegetable nature of these organisms.

Novy has given the following classification of the vegetable kingdoms as a means of showing the position of bacteria in plant life:

Phanerogams (Flowering plants and develop from seeds).

Cryptogams (Are flowerless plants and from spores).

Thallophytes	{ Algae. { Lichens. { Fungi.	{ Schizomycetes, or fission fungi bacteria. { Hyphomycetes, or thred fungi molds. { Blastomycetes, or budding fungi yeasts. { Myxomycetes, or slime fungi.
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Classification of bacteria is one of the perplexing phases of bacteriology, especially to the student. The morphological forms are divided into classes according to the shape of the organism.

Morphologically bacteria are divided into:

1. Cocci—spheres.
- (a) Diplococci—groups of two.
- (b) Tetrads—groups of four.
- (c) Staphylococci—groups resembling a bunch of grapes.
- (d) Streptococci—those which form chains of three, four or more elements.
- (e) Sarcina—groups of eight or multiple of eight, resembling a bale of cotton.
2. Bacilli are single cells which are longer in one direction than in the others.
3. Spirilla are forms resembling spirals.
4. Vibrio, curved bacilli, which when united form spirals.
5. Zoöglæ, a mass of bacteria embedded in a gelatinous matrix secreted by the micro-organisms themselves.
6. Involution forms—those micro-organisms that deviate from a type or undergo degenerative changes, probably as a result of nutritive variation.

STERILIZATION.

Sterilization is the process by which matter is freed from living organisms. This may be accomplished either by moist heat, chemicals or filtration.

MOIST HEAT.

This includes the use of boiling water and of steam.

Boiling water is used to sterilize instruments such as surgical or others made of metal which would be injured by other methods. The process consists of placing the objects in a suitable vessel containing water, and then boiling over a flame for some time.

When steam is used, the matter containing germs is placed in a sterilizer and allowed to remain in contact with live steam, the length of time depending upon circumstances.

PRACTICAL STERILIZATION.

This is a process by which matter containing germs is heated for a short time on several successive days. The advantage of this

process is that culture media, or other matter, which would be rendered useless, is subjected to a comparatively high degree of heat for a long time, is by fractional sterilization rendered sterile while their efficiency is not impaired.

Fully developed bacteria are more easily killed than spores, hence the material is subjected on successive days, not less than three, to the action of heat. The first time, almost all, if not all, the developed organisms are killed. After having stood 24 hours at room temperature the spores will probably have developed into bacteria and these new organisms are killed by the second heating. A third application of heat is insisted upon to insure perfect sterilization.

DRY HEAT.

This includes the use of dry air and of the flame.

Instruments not injured by heat, such as are made of glass, etc., are sterilized by hot air by placing them in a suitable receiver in a hot air oven, and then gradually raising the temperature to 160° C., and keeping it there for ½ to 2½ hours. The flame is then removed and the contents of the oven allowed to cool.

Instruments (knives, scissors, forceps, platinum wire), are generally sterilized by heating in the flame. In doing this it is not necessary, except in the case of platinum wire, to bring the instruments to a red heat; it is enough to pass them slowly several times to and fro in a flame (Bunsen burner).

CHEMICALS.

The most generally used chemical antiseptic is bichloride of mercury (Hg Cl_2), as 1 in 1000 aqueous solution. It is advisable to have on hand a solution of this substance which contains 1 gram of the salt in 20 c.c. of water. Then by diluting, the 1 in 1000 solution is quickly made. As this is poison, tint the solution with a small quantity of picric acid, thus giving it a distinctive appearance.

The matter to be sterilized should be immersed in the liquid for varying lengths of time, depending on circumstances.

FILTRATION.

This process is used to sterilize gases and liquids. For ordinary bacteriological work cotton is the substance used to sterilize gases, though in special work such as air analysis, sterilized sand or sugar is recommended.

When it is desired to sterilize liquids the fluid is drawn through specially made porous earthenware, cups or cylinders, by means of an air pump.

CULTURE MEDIA.

Culture media are foods for bacteria. There are various culture media. Those most frequently used are potatoes, bouillon, agar-agar, gelatin and blood serum.

Potatoes present some difficulties in the way of sterilization on account of the numerous organisms which adhere to their surface, and especially to the eyes. When it is desired to prepare a potato for the cultivation of bacteria, it should first be washed with soap and water and rubbed with a stiff hand brush, then rinsed thoroughly in running water. Now cut out all the eyes and all dark or black spots, being careful not to go too deep. Place the potato thus prepared in a suitable vessel, a large breaker is convenient, and completely cover with 1 in 1000 mercuric chloride solution. It should be allowed to remain in this solution of about ten to fifteen minutes, then remove and wrap in a piece of white filter paper and heat in a steam sterilizer. This operation is conducted to kill all the germs that have remained after the above treatment, and to cook the starch, as bacteria do not grow on raw starch. After the cooking process has been completed the potatoes are removed from the steam-sterilizer with the fingers of the left hand, which have been sterilized by washing, first with soap and water, then rinsing in running water, alcohol, and finally in 1 to 1000 mercuric chloride solution. The paper is now removed, and the potato cut in halves with a knife which has been sterilized in the flame and cooled somewhat. The cut surfaces being held together, the potato is now dropped (so that the cut surfaces will be uppermost) into a potato dish.

The potato dish should be prepared in the following manner:

Into the receiving portion place a piece of filter paper, which will cover the whole of the bottom. Pour into it a small volume of 1 in 1000 mercuric chloride solution, and so turn the dish that every portion of the same may become wet with the solution. After this has been done the superfluous liquid should be poured off. The cover should be prepared in the same manner. The dish is now ready for use.

MODIFICATION.

Another and convenient method for the preparation of this medium is to wash the potato, cut out the eyes and dark portions, then cut it into thin slices which are placed in petri dishes. These dishes are then placed in a steam sterilizer for one-half hour on three successive days. Still another method of preparing potatoes is as follows:

Cylinders may be cut from the potato, then bisected obliquely and placed into test tubes, which are then plugged with cotton. Place the tubes containing the cylinders of potatoes in a steam-sterilizer for one-half hour on three successive days.

It will be found that the potatoes are sometimes acid in reaction. This may be remedied, if desired, by rubbing over their surface a small amount of solution of sodium carbonate or sodium hydroxide. It is advisable to place the bisected cylinders of potato in running water for one-half hour. If this is done the potato may be kept for a long time before it turns dark in color. A little cotton may be placed on the bottom of the tube for the cylinder to rest upon.

For the inoculation of the potato take a small quantity of culture on a platinum wire which has previously been sterilized in a flame and then cooled. Draw the infected wire across the surface of the potato. If the potatoes are contained in a dish, the cover should not be raised any higher above the containing portion than is absolutely necessary, otherwise germs floating in the air may fall upon the culture medium.

OUTLINE FOR THE PREPARATION OF POTATO.

1. Scrub with soap and water.
2. Rinse in running water.
3. Cut out eyes and dark spots.
4. Immerse in mercuric chloride solution, 1 in 1000, for ten to fifteen minutes.
5. Wrap in filter paper.
6. Cook in steam sterilizer.
7. Prepare potato dish.
8. Cut with sterilized knife.
9. Place in prepared potato dish.

BOUILLON.

Five hundred grams of fresh, finely chopped meat, free from fat, are placed in 1000 c.c. of water and allowed to stand twenty-four hours in a cool place, an ice chest if possible. The fluid, called meat infusion, is then strained through cheese cloth. Made up to 1000 c.c. with water, if necessary, neutralized or made slightly alkaline with sodium carbonate or sodium hydroxide solution. To this liquid 5 grams of common salt and 10 grams of meat peptone are added and allowed to dissolve. Heat it in a steam sterilizer for about one hour, or until all the albumen has been coagulated, then filter through plaited filter paper. Test reaction with litmus paper. If it is found to be acid it should be neutralized with sodium carbonate or hydroxide. Fill test tubes, one-third full, which has been properly cleaned and fitted with cotton stoppers. Heat these filled test tubes in a steam sterilizer for fifteen minutes, on three successive days.

It is of course impossible to free the meat entirely from fat. It is however necessary to cut off as much as can be seen.

If the fat has not been removed from the meat, clear bouillon cannot be obtained. The strained solution (meat infusion) is of a reddish hue due to the hæmoglobin, etc., dissolved. If after one hour's heating in the sterilizer the solution still has a reddish tint it should be heated longer. When the coagulation is complete the coagulum generally, though not always, separates into two layers with a straw colored stratum of liquid between. The bouillon should be straw colored, clear, and free from solid particles. If it is found that the liquid is turbid after filtration the white of an egg or an equal quantity of dried egg albumen previously dissolved in a small volume of water may be added to the cooled bouillon, and the mixture again placed in the sterilizer for fifteen minutes, or until the albumen has coagulated, after which the mixture must again be filtered.

OUTLINE OF METHOD FOR NUTRIENT BOUILLON.

1. Chopped meat 500 grams.
2. Add meat to 1000 c.c. water.
3. Let stand twenty-four hours in ice chest.
4. Strain.
5. Neutralize.

6. Add 0.5 per cent common salt and 1 per cent meat peptone.
7. Heat in sterilizer.
8. Filter through paper.
9. Test reaction.
10. Fill tubes.
11. Sterilize on three successive days.

NUTRIENT GELATIN.

For the preparation of nutrient gelatin a liter of bouillon should be prepared as before directed. To this is added 100 grams of the finest white gelatin. This mixture should be heated in a steam sterilizer for about twenty minutes to dissolve the gelatin. Render the hot liquid neutral or make slightly alkaline, with sodium carbonate or sodium hydroxide solution, then filter. The filtering process is best conducted in a steam sterilizer. The funnel containing a plaited piece of filter paper, which has previously been wet, is placed in a ring on a retort stand. The whole is then placed in the sterilizer. A flask or beaker should be used as a receiver of the filtrate. Test reaction with litmus paper. Fill tubes one-third full, which have been properly cleaned and fitted with cotton stoppers. Sterilize for twelve or fifteen minutes on three successive days.

The first 10 or 15 c.c. that pass through the filter should be tested with litmus paper for the reaction, boiled to see if all the albumen has been coagulated, and lastly the tube containing the fluid should be placed into a beaker containing cold water to see if the gelatin will solidify. The reaction should be slightly alkaline, remain clear on boiling and solidify on cooling.

If the gelatin on cooling is found to be cloudy the white of an egg, or its equivalent of dried egg albumen previously dissolved in a small volume of water should be added to the cooled liquid, and the mixture again heated in the sterilizer for some minutes to coagulate the albumen and again filtered. It will be found that in coagulating the albumen will have taken up the small particles which caused the turbidity so that the solution is now transparent and yellowish, and does not change on solidification.

It should be remembered that gelatin has an acid reaction, so that the mixture should be carefully neutralized before filtration, and the reaction tested after it is completed. It has been our ex-

perience that nutrient gelatin sometimes develops an acid substance when heated in the sterilizer.

If too much alkali has been added to the liquid gelatin it should be neutralized with lactic or acetic acid. Unless this is done the finished product will be cloudy.

OUTLINE OF METHOD FOR NUTRIENT GELATIN.

1. Prepare bouillon in the usual manner.
2. Add gelatin.
3. Dissolve gelatin.
4. Neutralize.
5. Filter in steam sterilizer.
6. Test reaction.
7. Fill tubes.
8. Sterilize for from twelve to fifteen minutes on three successive days.

AGAR-AGAR.

Agar-Agar is a substance obtained, according to Gould, from certain sea weeds such as *Gracilaria lichenoides* and *Gigartina speciosa*. These being indigenous to the East Indies. The culture medium is made as follows:

Cut or triturate 15 or 20 grams of agar-agar into very small pieces. Place this in 1000 c.c. of bouillon made as before directed. Heat in a steam sterilizer three to five hours, or until the agar-agar is dissolved. Neutralize the hot liquid with sodium carbonate or sodium hydroxide solution, if necessary. Filter by the use of special filter paper made for this purpose (cotton or glass wool may also be used). The paper should be plaited. If ordinary filter paper is used it is advisable to filter in the steam sterilizer (as directed for gelatin), but if special paper is used this is generally not necessary, one need but change the filter paper two or three times. After filtration tubes prepared as directed are filled one-third full, sterilize on three successive days for fifteen minutes each day. After the last sterilization the tubes are allowed to cool in an oblique position.

When cool the medium will be opaque, or nearly so. A good preparation should not be brownish, this color being due to over-heating.

During the solidification of the agar-agar, there is pressed out

of the condensing mass a small volume of water, which is known as "water of condensation." This water should be allowed to remain in the tubes.

Agar-agar may be modified in various ways; the most common being the addition of 1 per cent of glucose, making glucose agar, or 6 per cent of glycerine agar. The above substances may be added before or after filtration.

OUTLINE FOR METHOD OF AGAR-AGAR.

1. Prepare bouillon in usual manner.
2. Add agar-agar.
3. Dissolve by heating in steam sterilizer for three to five hours.
4. Neutralize if necessary.
5. Filter.
6. Fill tubes.
7. Sterilize on three successive days.
8. Cool in oblique position.

PRESSURE ANESTHESIA.

In using pressure anesthesia for the painless extirpation of pulps when indicated, I use a method which may not be new, yet I have never seen it published. When the tooth is prepared and the cavity rendered aseptic, I take a P. & D. pellet of cocain 1½ and adrenalin 1-600, roll a few shreds of cotton around same, moisten with local solution, place over the exposure and then instead of using rubber, fill the tooth with temporary stopping. Then apply pressure with a warm instrument toward the point of exposure. I have frequently succeeded with the stopping after I had failed with the rubber.—*Dr. W. H. Jones, Items.*

CONTROLLING HYPERSENSITIVE PALATE WHEN TAKING IMPRESSIONS.

In a case where no one had been able to get impressions, the throat and palate being so sensitive, impressions were taken with no unpleasant symptoms whatever after the following treatment: Three powders of chloretone, each containing five grains, were given to patient with instructions to take one upon getting up in the morning; another two hours later, eating a very light breakfast; the third after breakfast, before reporting at the office. Two grains were then given at the time of taking the impressions.—*A. E. Franklin, Dental Register.*

ORIGINAL CONTRIBUTIONS

TOOTHsome TOPICS.

BY R. B. TULLER.

Jinks! Ime bothered.

I don't kno weather to be a dentist er not.

An' ef I am goin' to be, I don't kno weather to be just a All vealer dentist, a Mack Silary dentist, er a jest a ornery jaw dentist.

Ma sez if she wuz goin' to bee one, she'd be a All vealer dentis', an' hav sum parlars down town, an' not be jest a common house dentist.

You see, pa he sent hir down to rubber in some ov them one' day, an' she sed ther wuz so menny peepel in that all veeler place she hatter take a check an' wate her tern; caws she wanted to see Mr. Marton hisself an' nobody elce.

Bimeby, she sed, she wuz let into a little room, an' the doc sed he wuz the eriginal Doc Marting an' she'd hav to hav gold crowns an six or 8 front upper an' lower teeth an' her back teeth pulled an sum chiny ones set in the veel what ud never ake er de kay, an' it wood only cost \$300\$\$.

Ma ast when cud thay begin, jest like reddy money; an' Doc Marting sed they cood put the crowns on rite away—pervidin' she had some munny wit her to start with. Ma sed she hed only bout fifty with her (which ment \$.50 cents) an' he sed he otter have not less'n seventy-5 er 100 enny way—but, sein' it wuz her he would take the 50\$\$ and begin puttin' on the crowns.

Ma sed, "Why, I didnt think Ide hav to hav 'em all crowned in front, caws I got 4 er five porsolane ones in there not long ago (Sum 'at pa put on fer her,—dandies, but she didn't tell him that). She sed he looked confuster sum, but he bobbed up all OK an' sez:

"O yes, but thay ar awful poor ones an' ar shrinkin' away from the roots—an' frum the tooth an' ar dekayin' an' ef yer wanter

save um, maddam, you will have to have gold jackets on 'em. You got a awful poor jobb when you got *them* dun."

Ma felt like punchin' his all veeler, but she wasent giving her gaim away, caws she mite wanter go agin fer sum pinters; but she wuz purty neer red hot bout his slanderin' pa's work, caws 'twas so good he was all fooled like every one is, them teeth ar so natcherl.

But ma she jest kep her face strait an' sed:

"Ar yew Doc Marting?" An' he sed, kinder short, "Didn't I tole you I wuz?" An' ma sed, "Well, it's kinder quear. I wuz here last week, an' a nuther doc sed he wuz Mr. Martun. How's that?"

He chawed his mousethace an' then he sed: "O, yes, that wuz my bruther. I got severl on 'em with me here and they is all jest as good as me. My! you don't think I cood take keer or all these peepel alone, do you? But, come, maddam, bizness is bizness. You give me them 50\$\$\$ an' we'll git sum crowns on, an' then giv you a nuther 'pointment."

Ma, she's kute. You don't ketch her, specially when she hain't got no 50, and she sed, "All rite," an' then she went up to the wall to lift her petty cote to git the munny, when she let out a squeel an' sed, "My gratusious! lemme go quick; I left my purse in Marsh Field's. I'll bet it's gone,"—an' she was gone, too, fore he new what had happened, an' she kem home an' tole pa bout his bum jobb in porselain what wuz decayin' an' shrinkin' an' rottin', an' pa wanted to go down an' noc off the feller's block, but he didn't.

You see, pa's on the fense. All our relation keep a-tellin' pa he's a fool to be ethercal an' poor when he cud brake away an' be ritch soon, an' pa don't kno where he's at. When he has a streak of luck an' is suc cessful he is way up in the top noch, an' swells up with pryde, an' sez dentristy is the gratest perfeshun there is; an' he's goin' to stick to the legitemate practice.

'Nen agin he bangs things an' sez it is the meenest bizness a man ever got into, an' he can't git prices ner his pay when he gits 'em, an' ma sez she can offen see saffire language in his eyes ef he don't let none go.

(Ma hain't allurs 'round.) I kno sum of pa's patients make him mad sum times, an' I can see that same what ma calls *saffire* in his eyes; but he's jest as smooth as jelly and bred afore his

pashents. He is so nice when enny of 'em is here that we sum-times wish they wuz sum round most of the time.

But then agin I've seen him bile inside fer quite a while an' keep reel cool an' then of a sudden bile rite over—not offen, but *onct* enny way. One day he allmost bit his tung in 2 'fore he biléd over, an' nen she biled hot, an' I don't blaim him.

You see, a old woman came in an' she ast: "Doctor Jerkum, how much do you ast to jerk a tooth—a loose one?" Pa ast her if she wanted to take gas an' she sed she didnt wanten git hirt.

Pa 'lowed it wood cost her a dollar and a $\frac{1}{2}$ if she took gaz. "How much with out gaz?" she ast. Pa sed a doller, an' she hol-lered out, "A dollar!" Nen she sed she guessed pa made munny on gas, fer he got fifty cents fer a little bit, an' it only cost 85 sents fer a 1,000. Then she made a nuther holler 'bout pullin' out a looz tooth fer a dollar—sed it wuz a out rage—she cood pull it out with fingers. Then pa sed, "Why don't you pull it? You don't kneed me."

She felt of it and sed it wasn't worth morne 25 sents, an' she was willin' to give that fer snappen it out.

Pa sed (an' I seen that kind of fire in his eye)—"Mrs. Cheeply, you got in the rong place. I spent several years and several thousand dollers to lern to pull teeth, tight er loose, big er little, an' I hain't got my munny back yit by a long ways. My price is a doller an' sum times more—if it is a hard case—an' they hain't no use of discussin' it. If you want yer tooth out quick an' no more foolin' it will cost you a doller."

"Huh," she sed, "all they pertend to ast at the Bostine parlors is 50 cents, but I don't wanten go down town." Pa said, "Well, *that's* your place. Now, my time is munny and you've taken a hull lot already."

She set and thot a minit and then she all of a sudden rammed in her fingers an' brot that tooth out and then laid it up all bleedy on pa's nice clean napkin on his bracket, and sed "There!" Then she begins to holler an' yell to beet the band until she fel back and got white an' begin to mone.

Pa grabbed the winder and threw it up, and then he tipt the chare way back an' got a fan and fanned an' flopped sum water in her face (which she didnt like), then he chuckt a bottel of sumpin' under her nose which made her flip her head every way to git away

from it, an' she kickt pa in the stummick, an' grabbed his cleen shirt front with her bludy fingers, an' then she cum to.

Then she hadent got through, an' begin to cry an' hav hiss ter-ricks, an' got blud all over her shirt waste an all over the floor and pa's chair, which he'd just got all fixt up with cleen towels, and ma hatter cum in an cumfert her, an' she got blud on her an' bime by she wuz reddy to go an' started. Pa sed, "Mrs. Cheeply, I think you ow me 'bout a doller at least. Look at my shirt, my chare, my napkins, and my floor!"

Mrs. Cheeply's white face got reddern a beat, an' she looked like she'd eat pa up, as she yelled back. "A dollar! Look at my waste jest ruined. I otter hav \$3.00 and 50 cents—what it cost." Pa sez, "Why, I didn't pull yer tooth. You done all that yourself." An' she snapped back, "Well, what ar you a chargin' me fer, if you didn't pull it? If you'd had sum towels over me as you shud, I woodent got my waste all dobbed up an' ruined. I'll send you the bill," an' she jest kep rite on goin' out.

Pa was a bilin you bet. He let the saffire language go like this: "Mrs. Cheeply, yew ar well named! Good day!" an' Mrs. Cheeply had the nerve to sass back: "Good day, Doctor Jerkum—nit!"

Well, sir, that wuz the time when he let go some—red fire, I shud say, an' rite afore ma, an' I wuz goin' to duck, but ma lafft so hard I was afeared she'd hav a fitt. The more pa swo—sed things, the more she lafft an' as it's ketchin, I butted in a laff too, and pa got mad at ma, an' at me, he trun them dobbed towels at me an' sed, "You skidoo, you young ape!"

Then ma kind of cum to an' sed, "Joel, it 'pears to me your so mad your kind of reflectin' on yourself." An' then she bust out some more; but she helpt pa to cleen up and spred new linen, an' 'fore she got thro pa wuz a laffin—or 1/2 laffin, an' he sed if he didnt hav the best wooman on earth fer a wife he'd throw up the jobb an' go to sawin' wood.

Ma is kinder fillersofical er sompin' like that, and she sed. "Joel, all wood has nots in. Dentistry is sawin' wood. You keep rite on sawin', and spit on yer hans when you cum to the nots, but keep sawin' an' you'll come out on top of the pile some day. Now, don't let little things like that disterb ye too much. It is aggravatin', but

at the same time it will 'ford us more laffin' stock than a barrel of munkeys fer some time."

Pa got kooled sum, but he'd fergit—or remember, maybe—an' slam somepin' would go, an' out wood bust sumpin that begun with d an' I'd look up, an' then it wood kinder swing into a song pa sings, "D-Dreeming, dreeming, of yew, yew old cat, I am dreeming." All ov which would tuch ma's funny bone agin, and we'd heer her merry laf in the next room. Ide feel same way, but sum way I dident dast when I'd look at pa's eyes. Gee!

Ant Merandy sez: "Oh, yes, be *ethercal*, Joel, if you dye fer it. Ef you wuz bossin' a dental parler down town yew woodent have none of that. It would be the other feller and' redly munny fer you." So I don't know jest what Ime going to be—not yit.

A METHOD OF DIVIDING PLASTER IMPRESSIONS BEFORE REMOVAL FROM THE MOUTH.

The method is especially suited for dividing plaster impressions of the mandible in those cases where the posterior tooth has considerably tilted forward, locking the impression. The method consists of tying a wire ligature around each tooth, leaving a long end to each ligature, bringing these over the tops of the teeth and tying them together across the space. A piece of tin foil is then hung from this ligature, and the plaster impression taken with this in situ. This causes the plaster impression to break easily into two portions when it comes to be removed, being nearly divided by the septum of tin foil.—*C. E. Combe, British Dental Journal.*

AN EFFECTIVE LIGATURE.

In cases where the clamp is objectionable for the retention of the rubber dam, and where the ordinary floss is not sufficiently bulky to prevent the rubber from drawing over it, a most admirable method of using the ligature is to first pass the floss through two pieces of rubber tubing, one piece for the buccal and one for the lingual side of the tooth. This is much to be preferred to stringing beads on the ligature, or using other means of holding the rubber dam. The tubing should be the smallest size sold at the rubber stores, the kind used for slipping over the bows of spectacles where they rest on the ears. To insure against leakage, drop a little sandarac varnish between the tubing and the enamel on the buccal and lingual sides.—*E. M. S. Fernandez, Dental Review.*



ABSTRACTS AND SELECTIONS.

DENTAL POTPOURRI—REMINISCENT, OPTIMISTIC AND SUGGESTIVE.*

C. M. WRIGHT, B. S., M. A., D. D. S., CINCINNATI, OHIO.

I choose this title, because I believe it will express the mixed and detached character of the selections which I have the esteemed honor and pleasure of presenting to you today.

These separate bits are taken from observations and experiences in dental matters, extending over a period of forty years. Though apparently haphazard, they are really strung together by a thread of protoplasmic living matter, in which the phenomena of earnestness and hope are prominent.

Infants haven't the faculty of reminiscence, i. e., as far as we can learn from our present psychology.

When baby smiles in its sleep, the fond young mother believes that angels are whispering to it, or that it is dreaming of past scenes and experiences in that heaven from which it has so recently arrived.

Cold-blooded doctors and old nurses, like Sarah Gamp, attribute the smile to quite a different cause. They believe that it is a psychological reflex phenomenon, on the part of the neurons, and that the afferent impulse started from a distant irritation, caused by a little puff of wind cross-wise in baby's insides, or by a misplaced safety pin in some mysterious region of baby's outsides. Youth has few reminiscences. It is only after years and years of experiences in the varied walks of a lifetime that the pigeon-holes of our brains get filled with bundles of impressions, etched in relief, or intaglio. Then a man can "reminisce" and bring some of these loose sheets to a meeting of the Alumni Association of the Chicago College of Dental Surgery.

*Read at the Thirteenth Annual Meeting of the Alumni Association, held at Chicago College, January 15, 1908.

There is evidence somewhere to be found, that, in the early ages of man's manipulative evolution, the dentist and the plumber were close companions. They were both workers in lead. In the French and German language to this day, the name of a filling for a tooth cavity, and the name of the act of filling such a cavity, is "lead" and "to lead," or "la plombe" in French, and "zu plomberen" in German.

We all know that traditions are common about the grandfather who pressed a leaden shot into a hole in his tooth and was forever afterward free from tooth troubles. It isn't so many years ago that a lead root with a porcelain crown was recommended as an implant into the socket of an extracted incisor, on the theory that the tissues are, by the presence of lead, stimulated to form a cicatricial wall, and "encyst" this metal. After the practice of using lead for filling was in vogue for a while, a higher class of man tried tin for this purpose, and from the respect we still have for this metal, whether alone or in combination with gold in alternate layers, rolled together, we must acknowledge that this was a wise step in advance in dental progress.

Then with tin still in favor came the dawn of the Golden Era. When we reflect what gold foil has done for our profession, we must see that we left the plumber long ago with his art and his questionable sanitations at the foot of the ladder, while we have climbed higher and higher into the rare atmosphere, breathed only by scientists, artists, and physicians. We have become an important profession and are so accredited by the educated people of the entire civilized world. We stand on the same round of the ladder of progress today that holds the medical and surgical specialists. Like them we have come upon this height by struggles, and like them we are looking toward reaching the next higher, and then the next still higher round, in this wonderful ladder of life. In the early days of gold, marvelous skill was displayed by ambitious dentists in stopping cavities with gold foil wedged into place, and keyed into permanence. I have seen thirty-six grains of gold placed securely into a cavity in fifteen minutes by setting cylinders made by hand into a cavity and fixing the same with a key of tightly rolled gold. I have witnessed such performances by the elder Knapp, and Fredricks of New Orleans. In one of the older dental magazines,

either the "American Journal," or "Dental Science," or the "Dental News Letter," an article by Dr. Clarke can be found in which he prescribes the filling of a distal cavity in a superior second molar, the third molar being absent. The cavity was made circular with a flat floor and straight walls perpendicular to the floor—a cylindrical cavity. The doctor rolled upon a broach a single dense cylinder of gold foil to fit the cavity snugly. With foil tweezers he carried this gold cylinder to place and forced it like a cork into the cavity. Then with a sharp-pointed instrument he pierced the center of the filling and pressed a piece of gold wire into this hole, and condensed the surface of the gold. This was ingenious and simple, and yet required a high degree of dexterity and judgment. At this time the "sticky gold" was an objection, and manufacturers and dentists tried to get rid of the innate cohesive quality of pure gold. All dentists were then soft gold and hard-pressure advocates, and callous places on the hands were exhibited, as evidence of the number of gold fillings made by the dentist. Waite, of London, it is said, once exhibited with pride the callus on the *palms* of his hands, to show how faithfully he pressed gold into his patients' teeth, and a rival dentist is reported to have said—"Ah! Waite got those callous places before he went into dentistry, by holding out to the strap of his master's carriage!"

Little by little the persistent quality of cohesion began to be made use of, and Arthur demonstrated that with long, sharp-pointed prongs on the faces of the filling instruments, particles of annealed gold could be made to stick together, partly by tacking and partly by cohesion, and a filling could be built to the contour of the tooth. Then the era of cohesive gold arose, and Atkinson with his mallet, Webb with his "definite principles," and Verny and Butler with their fine serations, and Shumway with his smooth ivory points, waked up an enthusiasm for gold fillings that encircled the world—and "American dentistry" became a watchword for skill. The American dentist went abroad and became ubiquitous. The American citizen was defined by a witty Frenchman as "a man wif gold in his teeth." Science and other branches of the art of dentistry kept pace with this progress, but *gold filling* was the central and conspicuous fact of dentistry. It was the design on the dental shield. It was the battle cry of the corps. It was believed to be

beautiful and artistic until esthetics and that false term "cosmetics" began to interest the cultured American.

During the height of this era of gold filling in America, in 1881, I witnessed at the London Dental Hospital a contest between two distinguished exponents of the old and new methods. The great "soft gold" man, Sir Wm. Saunders of London, the Queen's dentist, was at one chair, and Atkinson, the hard gold and hard malleting man of New York, was at another. Atkinson was in his shirt sleeves; his collar had melted and disappeared beneath his flowing beard. His long hair hung over his ears and shoulders. His countenance shone from the exudates which poured from his face. His patient was lying nearly prone in a Morrison chair. I knew that he was still alive from the expression of his eyes, though his countenance was hidden behind a square of rubber cloth. Heavy foil was laid in mats over the surface of a growing gold filling. An assistant wielding a steel mallet, struck hundreds of blows on the instrument designed by Atkinson for consolidating and welding gold. Harder! Harder! HARDER!! was the only words spoken, and this by the great Atkinson, as layer upon layer was malleted into place.

At the other chair gracefully stood the titled dentist of London—a large, fine-looking man, trim in dress, with stiffly starched standing collar. He held an ivory-handled instrument like a pair of plugging forceps in his right hand, and with the fingers of his left, he daintily kept a small napkin in position about the tooth that was being filled. Before him was a case with a number of compartments filled with hundreds of different sized gold cylinders. Saunders leisurely selected a cylinder, placed it in position in the tooth cavity, and with the same instrument pressed it to the walls. When he had introduced as many of these cylinders as he could into the cavity, he grasped a large-handled, broad-faced condensing instrument and for a few minutes used a good deal of expert muscle contraction. A burnisher completed the operation. After the fillings were finished, spectators crowded around, and one after the other made critical examinations of the work of the champions. The Americans found faults in the Englishman's filling, and the English shrugged their shoulders at the American's stopping. At the same time, on the steamship which brought over the American delegation to the World's Medical Congress, a New York dentist

had a chair placed in the salon of the vessel, and gave daily clinics in filling teeth with cohesive gold, before crowds of curious passengers. To be able to fill a tooth with cohesive gold and bring out the corners and cusps to the form of the original tooth, was to be a king among dentists. It was more than a fad. It was a goal, and American dentists gave all their energies to attain this sort of skill. It was the highest aim of their ambition, for a skillful gold filler was an aristocrat. Nothing else counted for so much. Then three conspirators, Flagg, Palmer and Chase, formed a combination of force, wit, science and earnestness, threw a bomb into the ranks of the dental army and named the bomb "The New Departure." It caused a shock that reverberated throughout the dental world. There followed some disorder in the ranks, much surprise, much discussion; but it was only like a seed sown in the ground, it required time to mature, and grow and bring forth fruit. Long after the planting was forgotten, the fruit appeared and we find now that it helped the steady, onward growth of dentistry, by broadening the scientific foundations upon which she rests.

During the Golden Era, many questions arose in regard to methods of operating, time required for operations, and fees for the same. Once, in London, seven operators were selected by the Odontological society, each to fill a tooth prepared by a committee, and the method, kind of mallet used and time occupied in completing the operation was to be carefully noted. Seven molar teeth were imbedded to their necks in plaster of Paris, in seven little boxes. Seven occluso-proximal cavities were cut in the seven crowns and shaped as nearly alike as possible, by careful measurement. Each of these boxes was marked with a letter, as M, O, L, A, R, E, S, and each of the seven operators was given a box. Under the observation of the committee the method, time, kind of gold, kind of mallet, etc., of each was carefully noted. Then the boxes were given to another committee of experts who without knowing which operator had made the filling, tested the specific gravity, the edges and borders, the comparative difficulty of dislodgement, etc., and reported on each letter. The records made by the first committee were attached to the letters where they belonged, and a diagram was tabulated of the reports of both committees.

I remember that the results caused astonishment. Two of the

fillings had taken the operators five hours and thirty minutes each to make, and they were both consolidated with the electric mallet. One filling had a time record of one hour and forty minutes, made by hand pressure and hand malleting. All used cohesive gold excepting the one hour and forty minutes' man, and he had combined some non-cohesive with his cohesive gold. Some had used automatic mallets. The filling that had required the shortest time had one or two points of excellence above the others. All were splendid fillings. I believe the idea of having this contest or tournament was to prove the merits of the electric mallet in the condensation of gold, but the point in the table of results that attracted the greatest interest was the difference in the *time* required by the different methods, and the thought prominent in every mind was, "What of the patient in a practical operation? Who would sit securely gagged for five and a half hours to have a tooth filled, when it could be done as well in one hour and forty minutes? Think of the endurance, the patience, the strain." The next thought that followed was one of commercialism from the patient's standpoint. "Shall I pay four guineas an hour, or twenty-two guineas for five and a half hours, to *this* man, when *that* man could give me the same service for eight? Should I not rather pay the latter eight guineas an hour for his superior method and skill, and save my own time and strain?"

This was food for thought, and dental thought has fed upon it, and the dentist and the patient have been benefited.

Speaking of commercialism, here is a sheet that has just been jolted out of a pigeon hole in my brain. A friend of mine was practicing dentistry in Zurich, while I was practicing in Basel. He was a tall, handsome, American gentleman, educated in Paris, and graduated as a dentist from a Philadelphia college. He had never attended a dental society meeting in his life. As the American Dental Society of Europe was to me like the apple of my eye, I urged my friend to attend its meetings and become a member. After many solicitations and arguments on my part, my friend consented, and either at Interlaken, Weisbaden or Paris, I forget which, attended his first meeting. We had a day of fine papers and interesting discussions. Our members flocked from nearly every capital in Europe, —from Madrid and Copenhagen, from Dublin Berlin and Paris.

They were a splendid set of cultured men, each from an entirely different locality, with its difference in environment, language, customs, habits. In a paper read, some one quoted the opinion of an American dental authority, that in the case of a child, when one sixth-year molar had to be extracted on account of disease or any cause, it would be far better for the future harmonious development of the jaws and face of the child if the other three should likewise be extracted at the same time. A long discussion followed. In the evening when my friend and I were alone in the rotunda of the hotel, I asked him with some eagerness, "Doctor, wasn't that a fine meeting, and didn't you enjoy it?" After a moment he replied: "I never in my life before knew why dentists are so poor. Now I know. It is because in a business way they are such blamed fools—fools!" "Why? why? what do you mean?" I stammeringly asked. "See here! did you listen to that discussion on the extraction of the sixth-year molar?" "I did." "Well, do you know what a financial loss it would be to the profession if that doctrine was practiced? We can figure that every sixth-year molar will require at least five fillings, say at twenty francs per filling, or one hundred francs for each tooth. Four times one hundred francs for each child's sixth-year molars is four hundred francs to the dentist. A dentist has, say, five hundred children's teeth to care for. Five hundred times four hundred is 200,000 francs. Figure farther, there are twenty thousand American dentists; twenty thousand times two hundred thousand is four hundred thousand millions of francs to the American dentist, and they get up and advocate the throwing away of this vast asset by the extraction of the sixth-year molars. I'm disgusted with dentists. They ought to be poor."

I am occupying far too much time with these loose sheets of reminiscences, and will hasten to the Suggestions which my title promises. The very fact that the dental profession has entertained and been imbued with doctrines which are altruistic and noble, and entirely for the good of the patient and mankind, and have been neglectful and regardless of such business-like calculations as my dear friend made, makes us poor. Many of the very brightest lights of the history of dental practice have gone out in middle and old age, in a poverty that is pitiable. Every man who can "reminisce" has pictures of an old age of poverty of men who, while health and

strength remained, were mighty dentists. They gave their best thoughts, their days and nights to service for humanity, for their and our profession, Dentistry, is built upon the earnest labors and sacrifices of these men. This is a weak place in the profession of dentistry. Can we not help to strengthen our foundations by cutting out this weak place and by replacing it with a wise policy?

Dr. Arthur Black read to us of Ohio—last month at Columbus—of the splendid organization of the Dental Profession in Illinois. Such organization is really vitalization, and is of infinite value to the future of dentistry. It carries with it a power that can hardly be computed—for the good of mankind, for the good of the profession, for the good of the individual. My suggestion is that just at this time in this grand scheme there shall be made a provision that will do away with the blot on our life history. A life insurance actuary could figure out an easy-working plan, by which the organized profession of Illinois can tax itself with a small annual sum from each member, for a fund,—a sinking fund,—or rather a fund which will keep the older members from sinking into the slough of abject poverty. This is altruistic and practical. Three thousand dentists in one organization in one state, each paying an annual premium of one or two dollars, would make a yearly fund of three or six thousand dollars, and this would help the members who fall by the wayside and drop out of the ranks in our strenuous march up the rugged hill of progress. I'm very sure this could be done. I only offer it as a hint, and take the liberty of doing so at this meeting, because of the flattering reports of the success of your state organization scheme, to which my attention has been so recently called.

One more hint and I really will sit down, for I have done in my poor way all that I promised. I have been reminiscent, optimistic, and now, modestly (?) suggestive.

If you were asked to describe the ideal filling—how would you answer? You would hardly say gold, or porcelain, or a cast filling, or any of the cements, translucent or opaque, or gutta percha, or amalgam; and yet these are all that we have upon our list, and these are all that engage the energies of our most skillful operators in this department, in their efforts to modify, experiment with, study and improve. Amalgams and cements have been scientifically tested and experimented with by some of the best minds and most

accomplished dentists in the world for years—but are these materials capable of being transformed into “*the ideal*”? My ideal filling is the one I invent when I am sinking to sleep at night, or in a dream, and the only reason that I have not long ago discovered it to my professional brothers is because, like Col. Sellers with his universal eye-water, the ingredients are missing. Now, if my beloved friends will throw away their principles and alloys and chemicals, such as phosphoric acid, and zinc chlorid, and devote themselves to hunting for something entirely new. First, it must be a clear, translucent gum or exudate from some plant or tree—milkweed, spruce, sandarac, or what not. It may be a synthetic gum built up in the laboratory, one that softens by heat, cools rapidly, and becomes when cold as rigid as porcelain. This may be mixed with some silicate or oxide to give it consistency and not affect its milky lucidity. It must be softened by moderate heat, which will make the first layer adhesive to the walls of a cavity and capable of being built up, exactly as we mold and build the so-called “temporary stooeping” for dressings. When cool it will have the tooth-like appearance of, and the hardness and density of, tooth enamel or porcelain. The material will come to us from the dealer in little cylindrical rods and look exactly like the rods of porcelain which we used as inlays before the Jenkins porcelain era. It will not vary much in its conductivity from gutta percha. It can be removed, or added to, or cut down with warmed spatulas, and a hot instrument rapidly passed over its surface will polish it. When I find this substance, and present it to the profession, *gold* as inlay or foil, porcelain, tin, amalgam, cements, and gutta percha, will all pass away out of dentistry, and into history; and the filling and restoring of the teeth will be a simple and easy work of surgery with some artistic frills. The dentist will find ample space for his splendid energies and distinguishing skill, in the broader field of prophylaxis, facial and maxillary, orthopedias and oral surgery. Let us pray for that time to hasten its coming.—*The Bur.*

THE MATRIX.*

BY G. B. ELLIOTT, D. D. S., ELGIN, ILL.

The subject assigned to me by the Program Committee is one upon which I do not feel particularly well qualified to write, but will do what I can in the hope that the discussion of what I say will bring out new uses and methods of application of that valuable adjunct to our work.

I consider the use of the matrix essential to the proper filling of all compound cavities in bicuspid and molars with any plastic material, and particularly so with amalgam, as good results in the use of that material very largely depend upon the maximum amount of compression being applied to the mass in the cavity. This cannot be accomplished without the aid of a securely fastened matrix. Again, a well adjusted matrix greatly facilitates the attainment of the desired contour, and simplifies the finishing process. It prevents the excess of metal at the gingival margin, so frequently seen and so difficult to remove, when a matrix is not used. This surplus at the gingival is, as we all know, the cause of inflammation, soreness, lodgment of food, inconvenience to patient, with its resultant decay and eventual failure of our work. Almost always such a condition results in decay in the approximating surface of the adjoining tooth.

My first use of the matrix was under the instruction of Dr. Black at the Dental School. There we were taught to use a matrix of annealed copper or steel, about 34 to 36 gauge, cut to suit the case in hand, and adjusted to the tooth by means of a waxed silk ligature passed about the neck of the tooth at least half a dozen times, drawn tight and fastened with a surgeon's knot. The ligature was prevented from slipping from the matrix toward the gingival by turning up the corners slightly at each end of the band, thus affording a projection past which the ligature would not readily slip. (Another good method of accomplishing this same result is to use the smallest hole of the rubber dam punch, not punching out the metal, but giving just enough pressure to form a bur, against which

*Read before the Fox River Valley Dental Society, December 11, 1907.

the ligature will catch. Thus we are enabled to prevent the ligature from slipping below the band in the interproximal space and impinging on the soft tissues, and making our adjustment insecure and ineffective.) An orange-wood wedge was cut to fill the gingival third and maintain the interproximal space, answering the further purpose of insuring a close adaptation of the matrix to the gingival margin of the cavity, and preventing the very objectionable surplus at this point. After thus being secured, the thin metal was burnished to a contact with the adjoining tooth in order that the contour and contact might be as perfectly restored as possible.

The individual movement of the tooth under pressure sufficient to properly pack amalgam will often cause enough separation to give a good contact point after the matrix is removed. It is often desirable to leave the matrix in place to be removed by the patient after the amalgam has thoroughly set; in these cases, this matrix is easily removed by the patient and the filling may be finished and polished at a subsequent sitting. With practice, skill may be developed in the use of this form of matrix so as to make it applicable to the majority of cavities where a matrix is indicated.

A form of matrix often found useful is one encircling the tooth and soldered with a lap joint. In cases involving the mesio, distal, and occlusal surfaces of a tooth, such a matrix is quite necessary to proper filling with amalgam. When the buccal or lingual wall is missing, the soldered band matrix often enables us to restore a tooth by using posts in the root canals. In this way, badly broken down roots may sometimes be made to support crowns and serve as abutments for bridges.

The matrices manufactured and ready for use, are, I think, generally of good form, and, as a rule, easily and quickly adjusted and help wonderfully in the work of making an amalgam filling of good form and density. Some of the numerous forms of the ivory matrix are applicable to most any cavity in the mouth. A very satisfactory use of one of the above forms is to apply it to a tooth as a protection to the gum; in cavity preparation it enables one to square the gingival walls and trim the margins without the danger of the instrument slipping and cutting the tissue in the interproximal space, particularly so when cavity margins extend beneath the gum. The more quickly adjusted forms of matrix will be found useful as an

aid in securing a wax model for cast metal inlay work. With it the wax may be pressed into the cavity and chilled; the matrix confines it to the walls and margins of the cavity and saves unnecessary carving and trimming.

In the use of cements, and the newer plastic preparations, in the incisors and cuspids, some form of matrix is of great assistance in getting the desired contour. For this purpose I have found a thin strip of celluloid, coated with vaseline and held to the lingual margin of the cavity with the finger tips, quite satisfactory. When the cavity is full, the part of the strip projecting to the labial may be burnished down over the labial portion of the filling before the mass hardens, and in this way the filling is left in the desired form and the finishing made very simple.

To me the various forms of matrices mentioned have been very satisfactory in use, and have enabled me to do a better class of work than would have been possible without them.

If there are any present who do not use a matrix in the class of cavities indicated, I can assure them that they will be more than pleased with the results of even their first efforts, and will find cavities, formerly looked upon as difficult ones, reduced to simple ones.
—*The Bur.*

A MOLDABLE MATRIX.

BY A. A. SMITH, L. D. S., CORNWALL, ONT.

It is a fact that the forms of matrices at present in general use are unsatisfactory, except in a limited number of ideal cases. More particularly is this the case in the anterior teeth, where the walls are not cylindrical or uniform in shape. In the case of the anterior teeth, then, it is almost impossible to accurately fit a metallic band to the lingual surface so that it will reproduce the proper contour of the tooth.

The idea of using a material that could be molded to the teeth, no matter what their irregularity of contour might be, occurred to the writer a number of years ago. Dental lac was tried, but it proved useless, because it spread under the heat of the mouth, and so it would not hold its form long enough for the insertion of a gold filling.

After several experiments I found a compound that would meet all the requirements of a matrix; that is to say, the matrix is moldable, and that it can be perfectly adjusted to the teeth, leaving no space on the lingual surfaces. The compound remains sufficiently rigid under the heat of the mouth. It is so hard that the plugger point makes no impression on it in ordinary usage. The manipulation of the compound is very simple and easy. To apply it, first soften it by heating over the flame of a spirit lamp; then place the plastic compound on the lingual surfaces of the teeth, and by pressing it to place with the fingers it is accurately molded to the teeth. In pressing the material to place a small portion of it is pushed into the cavity of the tooth, which has been properly prepared and shaped for filling, forming a little teat or projection. The matrix can be instantly and easily removed. The little projection that was forced into the tooth cavity is now burred off till the lingual surface of the impression is properly contoured. This portion is then polished with a gold burnisher. The whole operation of forming the matrix, from beginning to end, requires two minutes. The matrix being hard is now readily slipped into its place on the lingual surfaces of the teeth.

A difficult approximal cavity is thus reduced to a simple cavity, with four walls. A gold filling can in this way be easily inserted in a difficult cavity. The matrix is readily, and without effort, held in place by the fingers of the left hand. The plastic matrix has also this advantage, that it can be instantly removed to examine the progress of the filling, a feature not readily available with the ordinary matrix. When the filling is completed and the matrix removed, it will be found that the lingual portion of the filling is perfectly contoured and requires very little, if any, finishing.—*Dental Practice.*

THE LATEST DECISION OF THE GERMAN SUPREME COURT.

KANSAS CITY, Mo., February 10, 1908.

TO THE WESTERN DENTAL JOURNAL:

It is with great timidity and hesitation that I take upon myself to discuss in your valuable columns an item of such international character as the latest decision by the Reichs-gericht, regarding the practice of dentistry by United States citizens in blessed Germany. But for the interest of the public at large, and more especially for the dental student, I shall humbly endeavor to outline its vital import and its jurisdictional significance.

Here is an exact translation of the judicial verbatim: "A general permit should be granted to American dentists, graduates of reputable colleges, to use their title of Doctor of Dental Surgery publicly and without interference upon the part of the authorities, but these are prohibited from using the German designation, *Americanischer Zahnarzt*."

Germany's attitude toward the stranger within her gates is of no secret to those who ever crossed her borders. To maintain her high standard of culture and civilization she spends yearly millions of marks for archeological purposes. Her learned professors are busily engaged excavating old mummies from Egypt's ancient ruins. From the pyramids and obelisks they try to learn the story of her past glory. Amid the ruins of Babylon and Nineveh they are wasting their lives to unearth some effaced tablets that might tell the story of King Nimrod. For relics of Roman or Grecian temples palatial museums are built and maintained. Poor Zeus and Jupiter, before whom Alexander the Great and the mighty Cæsars have prostrated themselves in reverence and devotion and to whom thousands of people have sacrificed their own offspring, are nothing but exiles on Teutonic ground. Or, as Heine has it, "What is a God without a church and a demi-god without a job." It is all done under the screen of science and art. We study Aristotle, Sophocles, Socrates, Plato and Demosthenes for the sake of knowing, but what about their living examples? The hospitality of these savants and the Greek nation in general which flourished nearly two thousand years ago and which has become a proverb among the nations of the world, puts Germany, with all their boast of high ideals and accomplish-

ments, to shame and derision. Nowhere are the rights and privileges of the unprotected stranger trampled upon with so little disregard of common decency and respect that one fellow-man owes another, as in Germany. Her open door policy is worse than the passport system of unholy Russia. No one can live there twenty-four hours without having officially reported his name, nationality, age, birthplace, profession, religion, etc., to the city administration. When a foreigner, he is made to appear before a petty official who shows no mercy to the individual who cannot produce a resourceful bank account. No chance is given to anyone who is not blessed with German birth to make a living there. Even students have to give a satisfactory explanation as to their means of livelihood. A special system of espionage has been inaugurated in Berlin and in the larger cities of the Empire, who go so far as to search the pockets of the traveler and itinerant. Upon the least suspicion he is sent without notice by etape across the frontier. An undesirable subject is treated like the worst criminal and the most desirable is considered the one who has a substantial income to fill the purse of his kind host. It is well-understood that the Yankees, who swarm Germany's amusement places at all times and seasons, who as a rule freely spend their American dollars, are always the most welcome guests. However, now a sudden and unsuspected problem came to the surface which perplexed the minds of German authorities, patriots and economists. American citizens holding D.D.S. diplomas of reputable colleges have invaded the Fatherland. Not only have those foreigners provided with United States passports succeeded in building up the dental profession, thereby bidding fair competition to the sons of Votan, but through business skill united with art, which is so characteristic with the Yankee, they have put the German dentist in the background. Hence, the result of the German Reichs-gericht. We cannot forcibly prevent you from practicing dentistry. You are privileged to use your American degree, D.D.S., publicly, but the technical term "Americanischer Zahnarzt," which means practically the same, must be removed from your signs. The former only the English-speaking people could understand. The latter, however, can prove a menace to her own practitioners, and can Germany afford to see herself beaten by a foreign element in her own country? It is unfortunate enough when we have to sacrifice every year at the altar

of Mammon some dissipated prince or count who, to save his neck, is put on the market of matrimony and bought outright by the highest bidder of American heiresses. O, irony of fate, what hast thou decreed! Shall our museums and art galleries fall a prey to American millionaires? Our great artists and concertists no longer sing "Deutschland Ueber Alles." They are infatuated with Uncle Sam. They love his old-fashioned trimmed whiskers; they revere his red, white and blue, but still more they are enchanted by his greenback. Hence the point of Germany's jurisprudence. Let this be a warning to future emergencies. The riots and wreckage of American shoe stores in Berlin, Frankfort A. M., and Vienna are still fresh in our memory. Let us not forget that dentistry is at present the only profession that is practiced by Americans in Europe. Should we allow to pass an occurrence of this nature without notice and without protest against all violations of common courtesy that one great nation owes another? Let us see what the thirty-fifth annual conference of the American Dental Society of Europe, which will be held in London, England, beginning July 31, 1908, is going to do about it.—*George Bergman, Ph.D., in Western Dental Journal.*

SUBSTITUTE FOR PORCELAIN FACING IN REPAIR WORK.

BY DR. J. V. CONZETT, DUBUQUE, IOWA.

Crown and bridge workers have always deplored the weakness of the porcelain facing, and although the Richmond crown and the gold bridge with porcelain facings are in many respects the strongest and most satisfactory methods of restoring lost dental tissues, all men who have had much experience with that class of work have had the embarrassing experience, oft repeated, of having their work come back to them after a period of longer or shorter duration, with one or more facings missing.

Because of these experiences, men everywhere have been seeking a substitute for the porcelain facing as we now use it, and quite a number have been placed upon the market from which we may choose. Many of these replaceable facings have a great deal of merit, and are

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being extensively used, and to those who find them satisfactory I have not a word to say. Personally, after having tried most of them and having found them wanting in some particular or other, I have gone back to the old method, and in most cases find it the most satisfactory.

My great trouble with the replaceable facings has been the fact that they are not strong enough for the purpose, particularly in cases with a short bite, and I have had more trouble due to the replaceable facings breaking than I had with the facings made from the plain plate tooth.

By reason of the fact that cases from my own practice and those of other men were coming to me from time to time with a broken facing, I was led to find some method of replacing them. I have tried many of the methods described from time to time in our journals, with only partial success, and not at all to my satisfaction, until I evolved the method I am about to describe; but since then a broken facing has no terrors for me. Although I have never seen the method in print nor have I ever heard of anyone that had used the method previous to my describing it, I do not claim it as original, for it is so simple and at the same time so effective that I have hesitated to publish it because I thought everybody must know of it.

The method I use is as follows: When a case presents with a broken facing, I remove the remaining portions of the porcelain, and with a No. 5 "gem" stone grind down the pins flush with the backing. I then drill a hole in the backing the size of a piece of No. 16 gauge wire. If the facing is that of an incisor or canine it is necessary to drill through the backing, in which case I counter-sink from the lingual surface. If in a bicuspid or molar, the depth is sufficient to hold the facing without drilling through. Having drilled the hole, a piece of iridio-platinum wire of No. 16 gauge, suitably threaded, is fitted into the hole, and with a sharp instrument the length of wire necessary is marked upon it. A piece of platinum foil 1-1000 inch thickness is soldered to this wire at the point marked and enough of the wire is allowed to penetrate through the hole the facing that shall be baked upon it. The wire with the platinum foil is now returned to the tooth and the wire is adjusted in the hole, care being taken that the wire goes into the hole sufficiently far.

The foil is now carefully burnished to the backing, removed and trimmed, again replaced, and the final burnishing made, when a perfect matrix should have been obtained.

This matrix can now be taken to the laboratory, and any kind of porcelain that is preferred can be baked upon it. I prefer the high-fusing bodies, using first a dark foundation body and filling the matrix fairly full; after the baking the facing is returned to the tooth for a final burnishing, and the enamel bodies of selected colors are applied and baked. If preferred, the matrix can be made of rather heavy gold plate; I have used No. 40 gauge and a low-fusing body for the facing, in which case the matrix can be left upon the facing and the whole thing cemented to place. In using the platinum matrix and high-fusing porcelain it is, of course, necessary to remove the matrix the same as from an inlay. In cementing to place I use a Jiffy cement tube to fill the hole in the backing and to cover the backing liberally before forcing the facing to place. If it be an incisor or canine and it has been necessary to drill through the backing and countersink the hole thus made, the cement should be protected with some metallic substance. I use amalgam, and having all things ready, I mix the amalgam and cement, take a small ball of amalgam and insert it in the counter-sunk portion of the hole lingually, insert the cement labially, and while holding the index finger of the left hand firmly over the amalgam on the lingual surface of the tooth, press the facing to place with the right hand. The facing is held firmly in place while the amalgam is forced into the countersunk portion of the backing and finished in the ordinary way. A facing can be made in this way very quickly, and with a little practice so accurately as to defy detection. If desired, the hole in the lingual portion can be filled with gold at a later sitting.

I have used this method for about two years, and have yet to report the first failure, but in case failure should occur, the operation can be repeated and the crown or bridge restored to its original usefulness.—*Cosmos*.

THERAPEUTIC VALUE OF MASTICATION.

It has long been recognized that the oral cavity constitutes an important factor in the physiology of digestion, and this importance is increased by the knowledge, now so universally prevalent, that many chronic diseases are directly dependent upon autointoxication originating in the intestinal tract. The part which the mouth and its accessory structures play in digestion is in fact of equal value with that assumed by the remaining portions of the alimentary canal, and this is of particular significance because it is here that the only part of the process resides which is under voluntary control. The oral cavity is concerned with the mechanical disintegration of the food, it regulates the temperature of the latter, and provides an admixture of saliva which, aside from its lubricating functions, affords a means by which the organs of taste are excited and the digestion of the carbohydrates begun. Pavlov has pointed out, the sensation of palatability conveyed by this means has an important psychical effect on the secretion of the gastric juice, and in addition, the peripheral stimulation of the gustatory nerve increases the potential energy of the entire nervous system. Monteouis and Pascalt (*Jour. des Praticiens*), following Fletcher and Chittenden in their modification of Cornaro's practice, believe that this knowledge can be made of great practical value in the treatment of certain diseased conditions. Thorough mastication, it is quite evident, will serve to make even small quantities of food more efficient and sustaining. In addition to this, the assimilation of otherwise indigestible material is favored and the remaining portions of the alimentary tract are relieved of a certain amount of labor. Systematic mastication, therefore, they regard as of particular value in dyspepsia and autointoxication; arthritis and neurasthenias of various types, which are believed to depend on the latter, will consequently be especially benefited. Even when the diet is limited to fluids, the suggestion also holds good in a way, for in this case it is advised that the nutriment be taken in small quantities at a time, in order to gain the same advantages in the way of gradual introduction into the stomach and mixture with saliva which would otherwise be produced by the acts of chewing.—*Med. Rec.*

THE MAKING OF ALUMINUM PLATE.

BY GEO. D. SITHERWOOD, D. D. S., BLOOMINGTON, ILL.

Take the impression with the best quality of plaster. For the die you may use any method with which you can make a good fit; I prefer the old-fashioned method, making a mold in sand from a plaster model, and using zinc for the die and lead for the counter die. I rarely make more than one lead counter die. With zinc you get just enough shrinkage in the metal to compensate for the expansion of the plaster. Of course, you must scrape the impression enough to ease the pressure over the hard palate and also scrape the plaster model enough at the heel so that the plate will fit close across the palatal arch. Where there is much undercut it is often necessary to make some detachable pieces of plaster to form the model so that it can easily be withdrawn from the sand in making the mold. For molding sand a mixture of any two or three good molding sands which the dental supply men furnish is best. The proportion in which to mix them you can best learn by experimenting a little.

Use pure aluminum plate rolled to No. 20 B. and S. gauge. Anneal thoroughly over an alcohol flame or Bunsen burner (spread flame with wire gauze for Bunsen burner), being careful not to overheat, and let it cool gradually or it will become soft like lead and have no elasticity. A manufacturing concern in Germany engaged in making aluminum, stated that by long gradual cooling from a red heat aluminum can be made so elastic that it may even be used for hair-springs in watches. Sometimes it is desirable to use aluminum plate with a network surface on the upper plate where it comes in contact with the palatal arch. The network surface is made by passing the plate through the rollers with a piece of fine ricenet, well starched or sized, and placed on the upper side.

In swaging, always place the plate on the die crosswise from the way it was rolled. Use a horn mallet and smooth pliers, always keeping a piece of thin tissue paper between the plate and die, also keeping the counter die and plate. The tissue paper is a great aid in keeping the plate clean, as there is always danger of driving small particles of zinc or lead into the texture of the plate. After it is

well adjusted to the die, the rim for either upper or lower denture is turned with a pair of smooth bite pliers and beaten down with the mallet or hard wood stock, driving it home in the counterdie without any paper.

The plate is then tried in the mouth, it is often better to try in the mouth before turning the rim, and trimmed where necessary to a perfect adaptation. A rim of softened wax is then placed on it and the bite taken. It is then placed on the articulator and the teeth set up, using either gum or plain, according to the operator's choice, attaching the teeth with wax in the same manner as for rubber attachment for a gold plate. For perfect articulation it is necessary to again try in the mouth. When the teeth are satisfactory, and properly placed, mark with a sharp pointed instrument at the margins of the wax and flask with plaster in a regular vulcanite flask. Separate the flask and remove all of the wax in the usual manner with instruments and boiling water. When the plaster is hard enough pack in the rubber, using the regular plate the rubber with pink for facing in front. Place a piece of cloth over the rubber and close the flask with heat, either wet or dry, according to the operator's choice. Remove the flask from the press, separate and see that there is sufficient rubber to occupy all the space from which wax was removed; if not enough, add more; if too much, remove some.

Then carefully remove the plate and place it on the zinc die for etching. Apply on the part to be etched, which is represented between the line marked before the removal of the wax and the turned rim, a little turpentine and sweet oil; this will prevent your chisel from sliding and cause it to cut as readily as if cutting into pure copper.

The etching is made with chisel and hammer, an assistant striking while you hold the plate firmly on the die, and move the chisel as desired. The first row is made with a straight edge chisel about three millimeters wide, turning the handle of the chisel outward; this forms a line of etching that will prevent the thin edge of rubber lifting from the plate; the remaining part is etched in rows around the plate, making each row by leaning the chisel in the opposite direction. A chisel with a bevel edge about five millimeters wide is suitable for this, being careful not to drive the point through the plate. The rim is opened a little so that the rubber will pass under

the turned-over portion. After the etching is completed drive the heel up to the die with a piece of hard wood, as the etching process will cause a little lifting of the plate at that point. Then place the plate in a porcelain or china bowl and pour on it about half an ounce of full-strength sulphuric acid, adding four times as much boiling water; in about a minute remove and plunge in a strong solution of bicarbonate of soda, rinsing and brushing in clean water with a little soap. If not bright and clean, repeat the process. When dry varnish all that portion not etched with a good coat of sandarac varnish. As soon as the varnish is hard replace the plate in the flask and vulcanize an hour and fifteen minutes at 320° F. or 95 pounds steam gauge. The sandarac varnish protects the plate, keeping it bright and clean, and is readily removed afterward with a little alcohol. In polishing, the rubber attachment is filed and dressed with scrapers and polished in the usual way, being careful not to cut or scratch the metal portion of the plate. Aluminum will take and retain a very high polish. The best means of burnishing is to use on the lathe a piece of soft wood made in the shape of a cone and soaked in olive oil; this closes the grain of the plate and gives a most brilliant polish.

Very erroneous statements with reference to the chemical properties of aluminum have often been published. Air, wet or dry, has no action on it. Water has no action either at ordinary temperature or at the boiling point, 212° . Sulphuretted hydrogen exercises no action, as may often be proven by leaving the metal in an aqueous solution of the gas. Sulphuric acid diluted in the proportion most suitable for attacking metals which decompose water has no action, and contact with a foreign metal does not help, as with zinc, which fact tends to remove aluminum considerably from those metals. Neither concentrated sulphuric acid gas (SO_2), nor nitric acid, concentrated or weak, acts on it at ordinary temperatures. In boiling, nitric acid solution takes place very slowly. Hydrochloric acid, weak or concentrated, dissolves the pure metal very slowly. Hydrochloric or acetic acid, or a mixture of acetic acid and common salt in solution in water has a slight action which is almost inappreciable if the metal is pure. Aqua ammonia acts very slowly, producing a little alumina. Strong alkaline solutions act with great energy on the metal, transforming it into aluminate of potassa or soda. It is,

however, not attacked by caustic potassa or soda infusion. Experiments by Prof. George Lunge, Ph. D., in which tests were made by immersing aluminum in coffee, tea, wine, beer and many acid solutions, confirm the chemical properties first mentioned, with many others, proving that no metal to be worn in the mouth, other than gold, is less acted upon by food, liquid or the secretions of the oral cavity.

Keeping the alumin perfectly clean and close attention to the small details will always give the best results. Always turn a rim in the plate and you will not be disappointed.—*Dental Brief*.

SOME PRACTICAL POINTS IN ORTHODONTIA FOR THE GENERAL PRACTITIONER.

BY RICHARD SUMMA, D. D. S., ST. LOUIS, MO.

In view of the generally accepted idea of the present day that orthodontia can only be practiced by specialists, the presentation of remarks such as I am about to make appears preposterous. However, I feel not the slightest hesitancy in stating that I fail to see why orthodontia is so foreign to dentistry that any dentist who has the energy and desire to do this work cannot obtain proper results, provided he prepares himself by thorough study of this subject. Specialization is oftentimes a necessity, but like all other virtues it has its limitations. It is an indisputable fact that every dentist must be able to diagnose malocclusion. By this I do not mean that he ought to be able merely to distinguish between a so-called crooked tooth and a straight one, but I mean he ought to be able to diagnose malocclusion in accordance with the principles taught by our esteemed fellow-member and colleague, Dr. Edward H. Angle. Having learned to diagnose malocclusion, it seems to me sufficient interest is aroused to awaken a desire to learn of its treatment. To argue this contention as it deserves to be argued would carry us too far from the theme of this evening's discourse.

Another reason why dentists ought to be able to do orthodontic work was forcibly impressed upon me during my visits to a neighboring state. This state contains not a single city large enough to

support a specialist in orthodontia, yet there are numerous cases which should be treated. There are and always will be many such localities, and if the law of supply and demand holds good here as it has in all instances in the past, the dentists of such localities will prove the correctness of my contention that orthodontia can be learned and practiced by general practitioners of dentistry. I also predict that dental colleges must teach and will teach orthodontia.

With a view of contributing my mite toward the promulgation of orthodontic ideas I have assumed the temerity of bringing before you some thoughts upon this subject in concise form. I submit these without any claim to originality, merely expressing impressions made upon me in my studies at the Angle School of Orthodontia which have been of value to me in my daily work.

"Occlusion is the basis of the science of orthodontia."—Angle.

Every tooth in malposition is also in malocclusion.

Every malposition of the teeth of one arch has its compensating malposition of the teeth of the opposing arch.

The time is at hand when every dentist should be sufficiently familiar with occlusion, the working basis of orthodontia, to recognize the initial stages of malocclusion, and to warn his patients accordingly.

Failure and inability to do this places the blame upon the dentist.

On the other hand, proper advice will prevent many cases which in later years arouse the sympathy of the dentist to such an extent as to induce him to jeopardize his peace of mind and reputation in behalf of a lost cause.

Malocclusion of deciduous teeth is far more prevalent than was formerly assumed.

These cases can and should be treated early in life. According to recent experiences permanently beneficial results are readily obtainable.

Examine the occlusion of every set of teeth presented, deciduous as well as permanent.

The first permanent molars are the key-teeth to occlusion, because they are the first teeth of the permanent set to erupt; they erupt unhindered by any deciduous predecessors; they erupt on time; they are most certain to be present; they are the largest and most powerful teeth.

Always note the mesio-distal relation to the first molars.

Avoid extraction of the first permanent molar.

If the first permanent molar is irreparably injured, preserve the space it ought to occupy and replace it at the earliest opportunity.

Avoid extraction. It is demanded but seldom.

Extraction for the purpose of regulation is incongruous.

Extraction has never corrected malocclusion, but often complicated it.

For study and reference obtain anatomically correct models.

These are only obtainable for accurate plaster of paris impressions.

To obtain such plaster impressions use good plaster, clean plaster bowls and spatulas, polished, smooth and properly shaped impression trays.

To obtain models from these impressions use thin shellac and candarrac varnishes, sharp and clean plaster knives.

Clean the teeth before taking impression.

The most frequent cause of gagging is the contact of the back of the tongue with the back part of the impression tray and plaster.

To overcome gagging instruct the patient to breathe deep. This will cause the tongue to drop involuntarily.

In taking the lower impression instruct the patient to bring the tongue to the top of the tray to avoid drawing the plaster away from the lingual sides.

Employ fixed appliances to the entire exclusion of removable appliances.

Orthodontia appliances should combine simplicity, strength, efficiency and inconspicuousness.

Orthodontia appliances consist of: A device which engages the anchor or resistance teeth; a device or devices which engage the teeth to be moved; a device which conveys the force generated between these two points.

Orthodontia appliances are inanimate. They derive their life from the judgment of the orthodontist, which becomes material through the medium of his fingers.

Do not waste time and energy making orthodontia tools and appliances which can be made, and made better, by the artisan.

At the same time acquire the necessary orthodontia technic.

Use the best materials, tools and appliances, they are not good enough.

Study the application of the expansion arch.

Employ the greatest care and foresight in placing these appliances so they need be changed least often.

The combination of forces which can be derived from the expansion arch are so numerous as to be practically infinite.

Take advantage of reciprocal force. It is most frequently and easily obtainable.

Take advantage of intermaxillary force.

It is not so much how great a force but how constant a force is applied.

In applying an expansion arch do not bend it to conform to the deformed arch, but bend it to conform as nearly as possible to the shape desired in the corrected arch.

Tolerate no loose ligatures. Always tighten ligatures before tightening nuts on the expansion arch, thus employ the spring of the arch before exerting pressure upon the anchor teeth.

Don't overtax the anchorage.

Cement all bands and keep the mouth clean as a prophylactic precaution.

Malocclusion of the teeth should be corrected in childhood.

Familiarity with the principles of occlusion is necessary to discriminate between the few cases which can be entrusted to correct themselves with more or less assistance of the patient's finger-pressure and the many cases which demand mechanical interference.

A patient is never too young for the correction of a malocclusion; but oftentimes too old.

Time and difficulty of tooth movement and retention increase in direction proportion to the age of the patient.

To harmonize the occlusion, the teeth of both arches must be moved simultaneously.

Interdigitation of the cusps of the teeth is nature's retainer.

"The best balance, the best harmony, the best proportions of the mouth in its relation to the other features require in all cases that there shall be the full complement of teeth, and that each tooth shall be made to occupy its normal position."—Angle.

Orthodontia procedures conducted during the period of erup-

tion and growth of the teeth may be considered as adjuncts to nature's efforts and consequently favorable results are readily obtainable.

Whereas orthodontic procedures instituted when the teeth have assumed their final positions are to be considered as interferences with the result of nature's misdirected energy and consequently favorable results are fewer and more difficult to obtain.

Be on the alert for nasal obstructions in early childhood and insist on their removal.

Lip-habits seem to be potent factors in the causation of malocclusion.

Early and late loss of deciduous teeth, while being factors in the causation of malocclusion, are not as potent as is often assumed.

A study of the mechanism of development will dispel the convenient story of the inheritance of the small jaws of one parent and the large teeth of the other.—*Tri-State Record*.

TOOTH BLEACHING.

If a brown stain persists apply a dilute solution of oxalic acid and quickly wash out cavity with sodium carbonate and plenty of hot water. Desiccate the dentin with hot air syringe, then saturate the interior dentin with white shellac varnish, harden with hot air and fill with white osteo or line it for insertion of porcelain, gold or amalgam.—*G. Fisher, British Dental Journal*.

TROUBLESOME THIRD MOLARS.

The most frequent cause of the serious complications attending the eruption of third molars is lack of vertical space. The irritation is usually produced by the contact of the previously erupted molar in the opposite jaw coming in contact with the distended membrane covering the erupting tooth. Careful grinding of the cusps of the previously erupted tooth will usually suffice to reduce the inflammation and reduce the pain, restoring the parts to a healthy condition.—*W. Kelsey, Dental Record*.

MEETINGS

SOUTHERN WISCONSIN DENTAL ASSOCIATION.

The Southern Wisconsin Dental Association will hold its fourteenth meeting in Platteville, Wis., May 27 and 28, 1908. A hearty invitation is extended to all ethical practitioners.

NEBRASKA STATE DENTAL SOCIETY.

The thirty-second annual meeting of the Nebraska State Dental Society will be held in Omaha, May 19, 20 and 21, 1908, at the Creighton Dental College. All reputable members of the profession are cordially invited to attend.

ALUMNI ASSOCIATION OF ST. LOUIS.

The Alumni Association of the St. Louis Dental College wish to announce that their annual clinic will be held at the College building, Grand and Caroline street, Tuesday and Wednesday, May 19 and 20, 1908.

A good program is being arranged and all graduates of the college are respectfully requested to be present and aid in making this meeting a success.

INDIANA STATE DENTAL ASSOCIATION.

The Semi-Centennial Jubilee meeting of the Indiana State Dental Association, at Indianapolis, June 4, 5, 6, will have for essayists the following well-known men:

Dr. Truman W. Brophy, Chicago, Ill. Subject: "The Deformity of Cleft Palate; Its Influence Physically and Mentally." Dr. George Zederbaum, Charlotte, Mich. Subject: "The Education of a Nation. Teeth." Dr. H. B. Holmes, Louisville, Ky. Subject: "The Influence and Benefits of Associations." Dr. M. H. Fletcher, Cincinnati, Ohio. Subject: "Alveolitis, the Disease of Which Pyorrhea Alveolaris Is One Stage." Dr. G. V. Black, Chicago, Ill. Subject: "Supernumerary Teeth."

Respectfully,

D. A. HOUSE.

MISSOURI STATE DENTAL ASSOCIATION.

The forty-third annual meeting of the Missouri State Dental Association will convene in St. Louis June 1, 2, 3, 1908, at the Planters Hotel. Rates 1.50 and up per day. Efforts are being made to make this the most successful meeting in the history of the association. Distinguished members of the profession from out of the state will be present. All ethical members of the profession are cordially invited to come.

O. J. FRUTH,
J. F. AUSTIN,
P. H. MORRISON,
Executive Committee.
St. Louis, Mo.

J. W. HULL, Pres., Kansas City, Mo.
E. P. DAMERON, Cor. Sec., St. Louis, Mo.

NORTHERN OHIO DENTAL ASSOCIATION.

The fifty-first annual meeting of the Northern Ohio Dental Association will be held at Canton, Ohio, May 26, 27, 28, 1908.

The sessions will be held in the city's auditorium, one of the largest in the middle west, with headquarters at the Courtland hotel. There are numerous other hotels in Canton, so there will be accommodations for all. Hotel rates may be had at from \$1.50 to \$5.00 per day, American plan.

Canton is essentially a dental manufacturing town, having three large and busy plants. The exhibits will be first class.

The committees are sparing no time nor expense to make this an especially attractive meeting. The program will be up to the standard of previous years. Men of international reputation have been secured to read papers and clinics.

Remember the time and place, May 26, 27, 28, 1908, Canton, Ohio.

The Executive Committee,
W. H. WHITSLAR,
J. H. WIBLE,
F. M. CASTO, Chairman.

NORTHERN INDIANA DENTAL SOCIETY.

The twentieth annual meeting of the Northern Indiana Dental Society will be held at Fort Wayne, Ind., September 8, 9, 1908. An excellent meeting is expected.

SOUTHWESTERN MICHIGAN DENTAL SOCIETY.

The next meeting of the Southwestern Michigan Dental Society will be held in Grand Rapids, April 14-15. For information, address C. W. Johnson, Lawton, Mich., secretary.

ILLINOIS STATE BOARD OF DENTAL EXAMINERS.

The next meeting of the Illinois State Board of Dental Examiners for the examination of applicants for a license to practice dentistry in the State of Illinois will be held in Chicago, at the Northwestern University Dental School, southeast corner of Lake and Dearborn streets, beginning Thursday, June 4, 1908, at 9 a. m.

Applicants must be in possession of the following requirements in order to be eligible to take the examination: (1) Any person who has been engaged in the actual, legal and lawful practice of dentistry or dental surgery in some other state or country for five consecutive years just prior to application; or (2) is a graduate of and has a diploma from the faculty of a reputable dental college, school, or dental department of a reputable university, or (3) is a graduate of and has a diploma from the faculty of a reputable medical college or medical department of a reputable university, and possesses the necessary qualifications prescribed by the board.

Candidates will be furnished with proper blanks and such other information as is necessary, on application to the secretary. All applications must be filed with the secretary five days prior to the date of examination. The examination fee is twenty (\$20) dollars, with the additional fee of five (\$5) dollars for a license.

Address all communications to

J. G. REID, Secretary.

1204 Trude Bldg., Chicago, Ill.

ARKANSAS STATE DENTAL ASSOCIATION.

The next meeting of the Arkansas State Dental Association will be held in Little Rock, May 26 and 27. A good program is being prepared and a large attendance is anticipated. The president is Dr. P. A. Skeen, Texarkana; secretary, Dr. L. K. Charles, Eureka Springs.

THE MICHIGAN STATE BOARD.

The Michigan State Board of Registration and Examination in Dentistry will hold its next semi-annual meeting to examine candidates for registration in Michigan, beginning Monday, June 8th, at 8 o'clock and continuing through the 13th, in the Dental Department of the University of Michigan at Ann Arbor. Applications must be in the hands of the secretary at least five days before the meeting.

For full particulars address the secretary, E. A. Honey, Kalamazoo, Mich.

Very sincerely yours,

E. A. HONEY, Secretary-Treasurer.

MICHIGAN STATE DENTAL SOCIETY.

Annual meeting and boat trip combined.

The Michigan State Dental Society will hold its annual meeting on Wednesday, Thursday, Friday and Saturday, June 10th to 13th, inclusive, on board the steamer City of Mackinaw, on a trip through the Detroit River, Lake St. Clair, the Flats and on to Mackinaw and the "Soo." The total expense of the trip, including passage, meals, berth, will be nineteen dollars for the round trip, and all our ethical dentists and friends are cordially invited to join us. The principal feature of the meeting will be table clinics, good papers, a complete dental exhibit and a good time. An ideal meeting under ideal conditions. Four days to find out what our fellow practitioners are doing.

Those desiring to have accommodations reserved for them should apply at once to Dr. O. W. White, 406 Fine Arts Building, Detroit, stating the number of persons in party and whether it is a family party or all men.

A deposit of five dollars is required for each reservation.

O. W. WHITE,

Local Arrangement Committee.

THE MINNESOTA STATE BOARD.

The Minnesota State Board of Dental Examiners will hold a special meeting at the State University, Dental Department, in Minneapolis, beginning at nine o'clock June 10, 1908. At this meeting all applicants for registration in this State will be examined.

For further information apply to

GEO. S. TODD, Secretary,
Lake City, Minn.

THE MISSISSIPPI DENTAL ASSOCIATION.

The fifteenth annual meeting of the Mississippi Dental Association will be held in the Senate chamber of the Capitol at Jackson, Miss., on June 9, 10 and 11.

A special programme is being arranged and a large attendance is expected. All ethical practitioners invited. For further particulars address

DR. E. DOUGLAS HOOD, Secretary,
Tupelo, Miss.

MISSISSIPPI STATE BOARD.

The newly appointed Board of Dental Examiners for Mississippi consists of Drs. P. H. Wright, Oxford; L. B. McLaurin, Natchez; A. B. Kelly, Yazoo City; C. T. Shumaker, Poplarville, and E. Douglas Hood, Tupelo. All are members of the State Association and represent the most ethical class of practitioners in the State.

The Board organized and elected Dr. A. B. Kelly, Yazoo City, President, and Dr. E. Douglas Hood, of Tupelo, Secretary. The Board will meet to examine applicants May 19 in Jackson. For particulars and requirements, address the Secretary.

Yours truly,

E. DOUGLAS HOOD,
Secretary Board Dental Examiners.

MISCELLANEOUS

IMPRESSION COMPOUND.

Take impression in the usual way. Remove and cool, then trim about one line over the whole surface, lay very soft layer of compound over impression and press quickly into place in the mouth; this gives a very sharp and accurate impression.—*Dr. J. B. Jordan, Summary.*

PAIN AFTER TOOTH EXTRACTION.

The extraction of an abscessed tooth is generally followed by great pain. I have found lysol to be the ideal remedy in such conditions, placing it undiluted in the socket. It will relieve the pain immediately, help it to check the hemorrhage, and establish antiseptic conditions in the socket.—*G. B. Winter, Dental Era.*

REPAIRING A HOLE IN RUBBER DAM.

Dry both sides and mix a little cement, sufficient to fill the hole, and leave an excess on both sides. Force it through and press the sides together. A small piece of vulcanite, moistened in chloroform, may be manipulated in the same manner with good results.—*W. A. Robertson, Review.*

EXTRACTION DURING PREGNANCY.

The irritation produced by ulceration at the root of a tooth is usually more liable to interrupt pregnancy than the administration of nitrous oxide and the removal of the tooth or establishing free drainage. The author has had gas given for this purpose and has never seen any bad results.—*Dr. M. E. Jordon, Era.*

SOLIDIFIED FORMALDEHYDE.

The various preparations containing formaldehyde are of great value in the treatment of putrescent pulps and abscessed teeth, either with blind or open sacs, and after an experience of about six years, I take off my hat to solidified formaldehyde, properly used, and right here let me state that too much sealed in the tooth will create more trouble than any drug with which I am familiar. The secret of success is to use too little, rather than too much.—*Dr. W. H. Jones, Items.*

If, instead of using equal parts of aconite, iodine, and chloroform, you use this prescription:

℞ Tinct. Aconiti (rad).....fluid ounces i
 Chloroformi.....fluid ounces iv
 Menthol.....gr. xx
 you will get excellent results.—*J. P. Buckley, Dental Digest.*

SENSITIVE CAVITIES.

If many sensitive cavities appear in the same mouth their sensitivity may be much relieved by removing the loose decay and washing them out with a stream of tepid water and inserting a filling of equal parts of zinc oxide and thymol crystals, using as a liquid, zinc sulphate solution. This is one of the most satisfactory materials for holding dressing in cavities that we possess.—*Dr. A. E. Webster, Dental Magazine.*

OBTUNDING.

If three or four drops of a 1 to 1,000 adrenalin chlorid solution be added to 20 to 30 drops of a two per cent solution of novo cain, the least toxic of these anaesthetics, and injected into the tissues about the apex of the tooth, or deeply into the interproximal space on each side, there will be such a profound effect on the pulp and dentin of the tooth that the dentin may be cut or the pulp removed without pain.—*Dr. A. E. Webster, Dental Magazine.*

A WORD OF WARNING IN DESENSITIZING DENTIN.

To those who are in the habit of obtunding sensitive dentin by pressure anesthesia I wish to give a word of warning. This is a dangerous procedure, not only because cocain is a protoplasic poison, but also because, as the cavity has not been excavated, the agent is forced through infected tissue, and made to carry the products of that infection into the pulp—a condition which cannot, by any line of reasoning that I can figure out, be anything but deleterious to the pulp tissue. It is undoubtedly true that many pulps die, even years afterward, as the result of the injudicious use of pressure anesthesia.—*E. MaWhinney, The Bur.*

PERSONAL AND GENERAL

District Dental Meeting.—The District Dental Meeting of Iowa was held in Mason City March 14th.

Incorporated.—The Billings-Marshall Dental Supply Co. have incorporated with a capital stock of \$100,000.

Dentist Commits Suicide.—Dr. Geo. B. Wright, Jr., a dentist at Auburn, N. Y., committed suicide Feb. 27th.

McLean County Dental Society.—The McLean County Dental Society held a meeting in Pontiac, Ill., March 9th.

Tennessee Dental Association.—The annual meeting of the Tennessee Dental Association will be held at Nashville, May 6, 7 and 8.

Melendy-Hudson.—Dr. Arthur Rice Melendy and Miss Mabelle Evelyn Hudson, both of Knoxville, Tenn., were married March 5th.

North Dakota Dental Association.—The annual meeting of the North Dakota Dental Association will be held at Devil's Lake, May 12th.

Seventh District Dental Society.—The Seventh District Dental Society will be held in Rochester, N. Y., March 30th, 31st and April 1st.

Wheeler-Sweet.—Dr. Charles W. B. Wheeler and Miss Harriett B. Sweet, both of New York, were married in Richmond, Va., March 1st.

Red River Valley Dental Association.—The Red River Valley Dental Association held its semi-annual meeting March 7th at Grand Forks, N. D.

Third Congressional District Dental Society.—The Third Congressional District Dental Society will meet in Morgan City, La., April 8th and 9th.

New Plant to Be Erected.—Plans have been completed for an immense new plant to be erected by the Ritter Dental Manufacturing Company, of Rochester, N. Y.

Champaign-Danville District Dental Society.—The Champaign-Danville District Dental Society met at Danville March 10th. The next meeting will be held at St. Joseph.

Oklahoma Dental Association.—The first meeting of the Oklahoma Dental Association of Oklahoma and Indian Territory will be held in Muskogee, Ind. Ter., June 8, 9 and 10.

Dentists and Physicians Erect Building.—The dentists and physicians occupying downtown offices in Cleveland, Ohio, have plans laid for the erection of a \$1,000,000 building for exclusive use of members of the two professions.

Dentist Appointed Captain and Commissary.—Dr. C. J. Sowle, a dentist of Rockford, Ill., has been appointed captain and commissary in

the Third regiment, national guards. He succeeded Captain H. P. Bradley, of Chicago, who retired from the service.

Dubuque District Dental Society.—The Dubuque District Dental Society held its annual meeting in Olwein, March 10th. The following officers were elected for the ensuing year: President, Dr. L. F. Hanks, Dubuque; vice president, Dr. F. W. Conover, Decorah; secretary, Dr. W. L. Mullan, Dubuque; treasurer, Dr. C. H. Jacobs, Colesburg.

Council Bluffs District Dental Society.—The Council Bluffs District Dental Society held its quarterly meeting Feb. 25th in Council Bluffs, Iowa, and elected the following officers: President, Dr. Horace Warren, of Missouri Valley; vice president, Dr. R. D. Miller, of Atlantic; secretary, Dr. S. W. MacColl, of Council Bluffs; treasurer, Dr. R. D. McEvoy, of Missouri Valley.

Odontological Society of Western Pennsylvania.—The Odontological Society of Western Pennsylvania was held in Pittsburg, March 10th. The following officers were elected for the ensuing year: President, Dr. A. G. Rinehardt, of Pittsburg; vice president, Dr. J. D. Whitman, of Mercer, Pa.; secretary, Dr. B. M. Loar, Mount Pleasant; treasurer, Dr. J. A. Libbey, Pittsburg.

Kankakee County Dental Society.—The semi-annual meeting of the Kankakee County Dental Society was held at Kankakee March 5th. Dr. W. D. Moore, of Chicago, gave a demonstration in casting gold inlay, and the following officers were elected: President, Dr. J. C. Winters, Kankakee; vice president, Dr. Johnson, Onarga; secretary, Dr. J. D. Welch, Kankakee; treasurer, Dr. Roy Barber, Kankakee.

Removals.—Drs. Gilbert Laue, from Suffolk, Va., to Gary, Ind.; F. H. Mero, from Little Falls, Minn., to Minneapolis, Minn.; Walter E. Alvord, from Oxford, Pa., to Baltimore, Md.; F. A. Motis, from Lincoln, Neb., to Tobias, Neb.; L. T. Outten, from Moline, Ill.; to Silvis, Ill.; Louis Pelton, from Clinton, Ill., to Bement, Ill.; W. A. Meis, from Dyersville, Iowa, to Dubuque, Iowa; J. P. Lockhart, from Boston, Mass., to Chicopee, Mass.; W. H. Shannon, from Coatesville, Pa., to British Columbia.

NECROLOGICAL.

Dr. H. F. Rose, a dentist at Dayton, Ohio, died March 9th. He was 43 years of age.

Dr. J. L. Moorman, a dentist at Cloverport, Ky., died Feb. 28th. He was 62 years of age.

Dr. T. M. Senderling, a dentist at Scranton, Pa., died Feb. 26th. He was 72 years of age.

Dr. E. Floyd, a dentist at Fayetteville, N. C., died March 3d. He was 76 years of age.

Dr. Geo. W. Day, a dentist at Cleveland, Ohio, died Feb. 21st. He was 60 years of age.

Dr. Thomas J. Hopper, a dentist at New Orleans, La., died March 22d. He was 86 years of age.

DENTAL PATENTS

Fig. 1.

866,753. Head-Rest—Henry E. Weber, Canton, Ohio. Filed November 23, 1906. Serial No. 344,719.—A head rest supporting connection comprising a barrel, endwise elongated bearings in the sides of the barrel, a rotatable cam transversely mounted in the barrel and journaled in the bearings, endwise movable blocks in the barrel abutting the cam with their inner ends and having spherical cavities in their outer ends, a

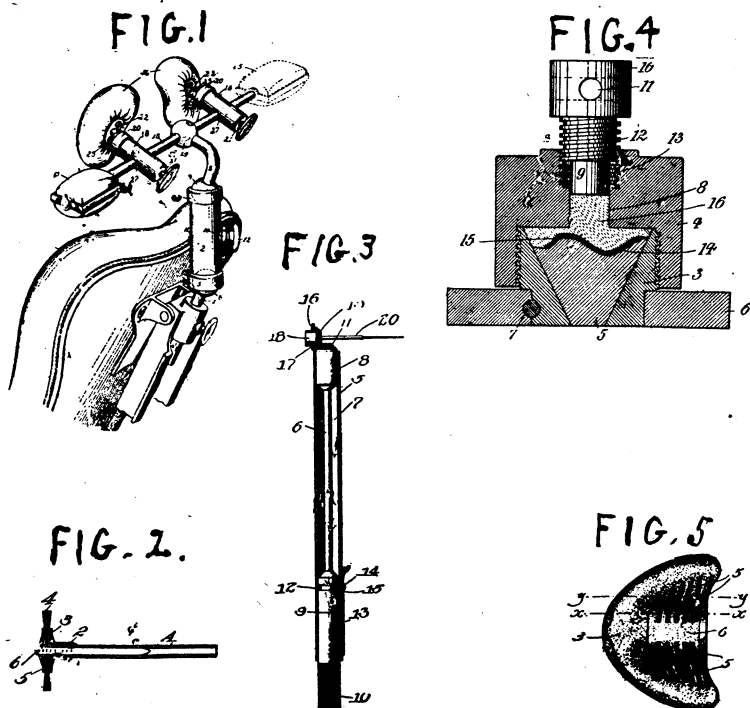


Fig. 2.

876,842. Dental Tool—Leo S. Robinson, Alameda, Cal. Filed July 18, 1906. Serial No. 326,692.—In a dental tool, the combination of a tubu-

lar expansive mandrel, a sleeve fitting the end of the mandrel, a dental disk, a flange and washer between which the disk is held, and a nail passed through the washer and disk and forced into the tube to expand the latter against the sleeve and hold the disk in fixed position between said flange and washer.

Fig. 3.

873,100. Dental Broach—Carl A. Skalstad, Chicago, Ill. Filed January 10, 1907. Serial No. 351,582.—As a new article of manufacture, a dental tool comprising a slotted sleeve, having an ear extending from the end of said sleeve integral therewith, a shaft fitting within said sleeve, and terminating in a bevel gear, a tool holder seated in said ear, and means for bringing said tool holder into operative engagement with said bevel gear.

Fig. 4.

866,962. Swage for Dental Crown Plates and Similar Articles—Carl Rauhe, Dusseldorf, Germany. Filed June 7, 1907. Serial No. 377,704.—A device of the character described, comprising a lower threaded mold-section having an inverted coniform opening, a die within said opening, an upper perforated mold-section engaging the lower section, a plunger engaging the upper section, and a soft rubber filling within the mold interposed between the plunger and die, substantially as specified.

Fig. 5.

872,626. Plate for Artificial Teeth—James Humphrey, Boston, Mass. Filed March 7, 1906. Serial No. 304,638.—The process of treating printing plates for the purpose of correcting or preventing a hard printing impression on the edges of the plates, which consists in subjecting the plate to pressure while its face is in contact with model.

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It softens readily under dry heat.
It will not creep under the spatula.
It is tough and can be carved perfectly.
It can be removed from the cavity without fear of distortion.
It is hard enough so that handling will not change its shape.
It will not warp while placing the sprule in position.
It is moulded in a convenient form to use.

Ask the Dental Depot for free sample.

Price per box Sixty Cents. Sold at all Dental Depots.

The Peck's Investment Compound



This Investment Material is guaranteed not to check and will **ALWAYS** produce the correct results. The only one advocated by Dr. Taggart in his paper read before the New York Society on Cast Gold Inlays.

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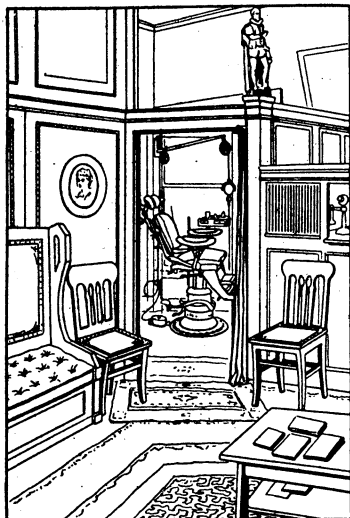
Price per can One Dollar.

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When you visit another dentist's office, how you notice the chair and draw conclusions therefrom. If it is old and out-of-date you mentally conclude that perhaps the dentist is out-of-date also.

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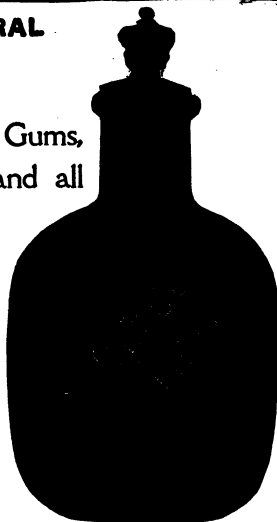
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